TECHNOLOGY DEPT

Gas Journal, December 30, 1953

ANNUAL REVIEW NUMBER

Gas Journal

VOL. 276. 105TH YEAR. LONDON, DECEMBER 30, 1953. NO. 4726. PRICE 1/3

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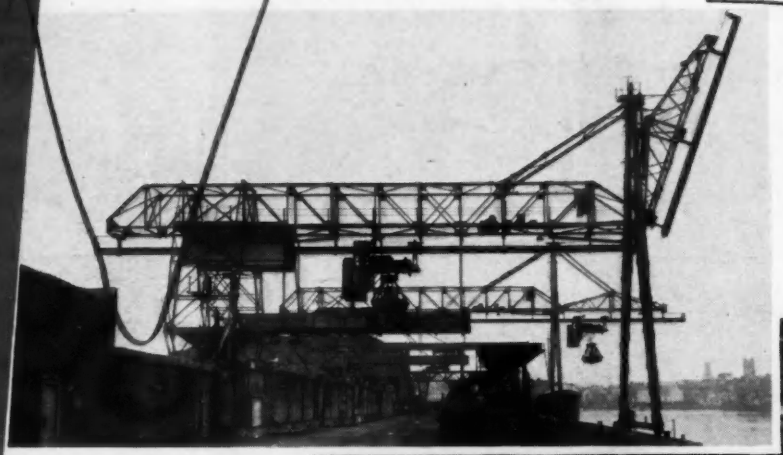

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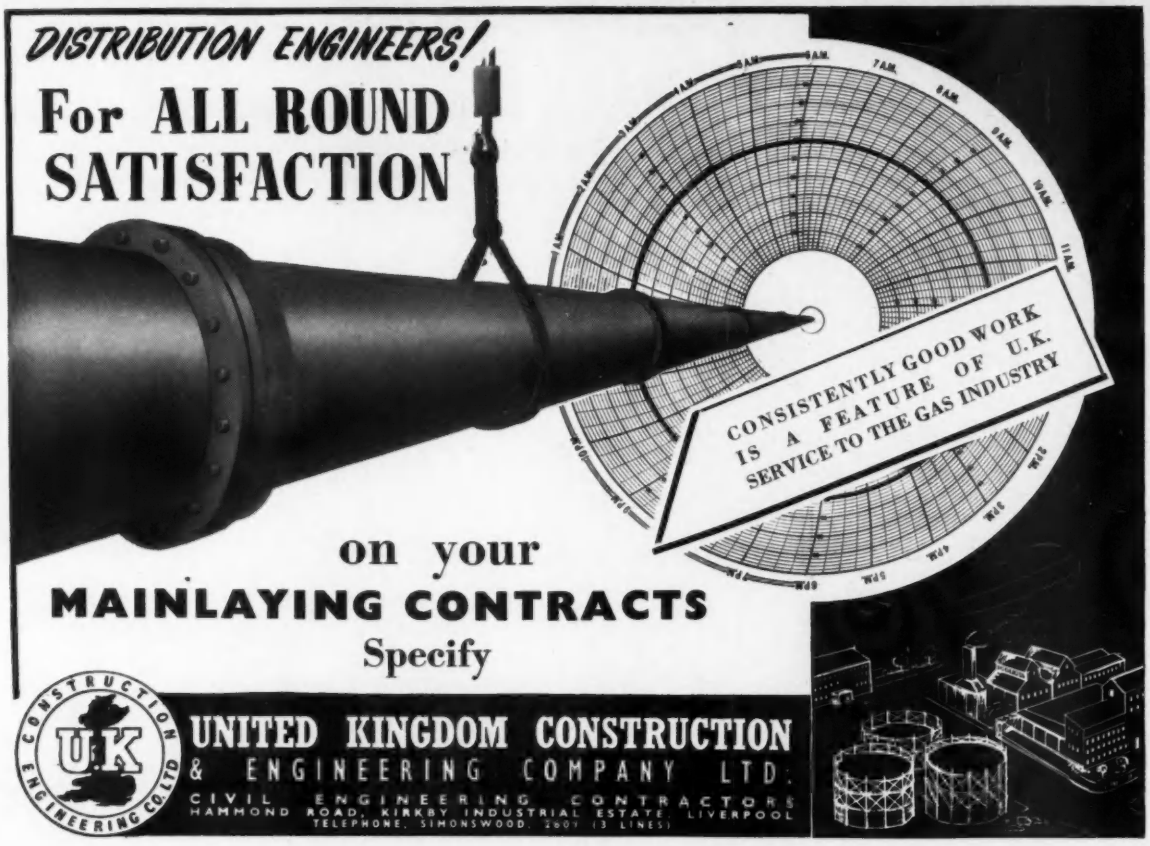

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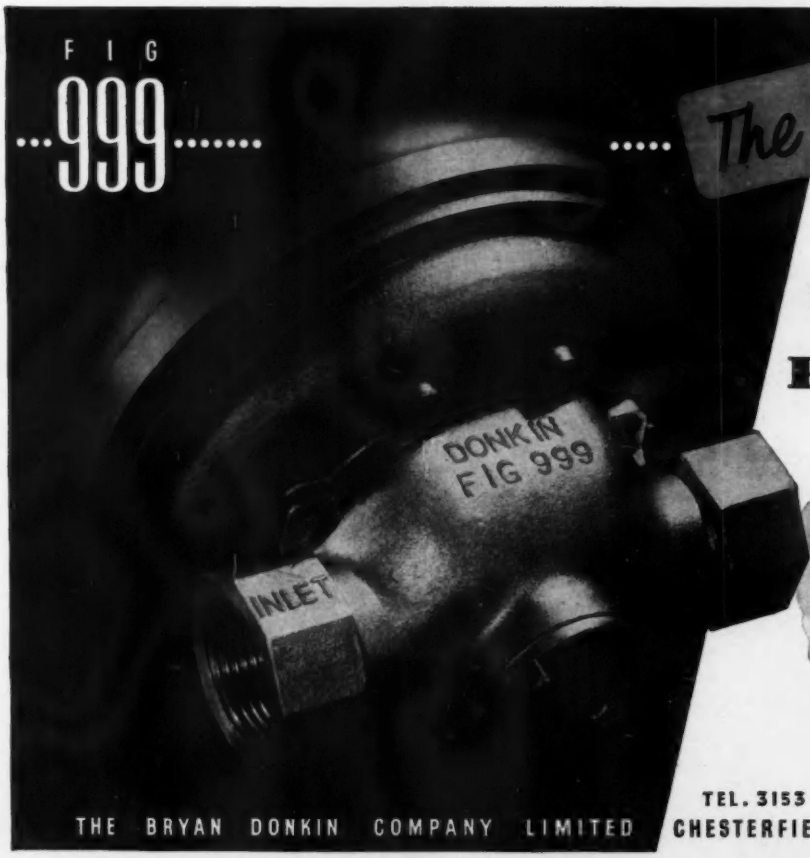

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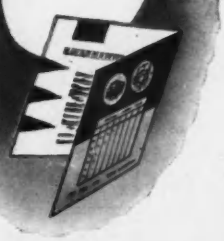

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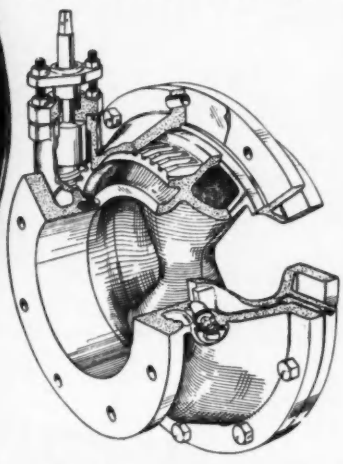

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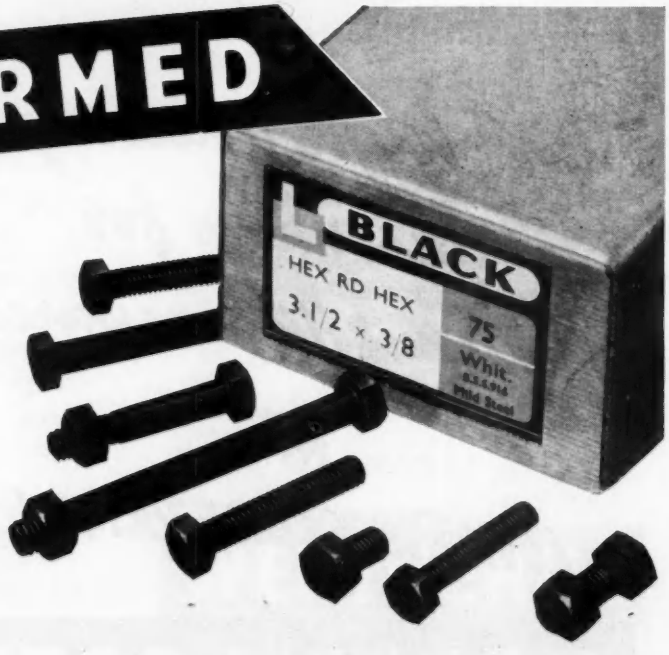

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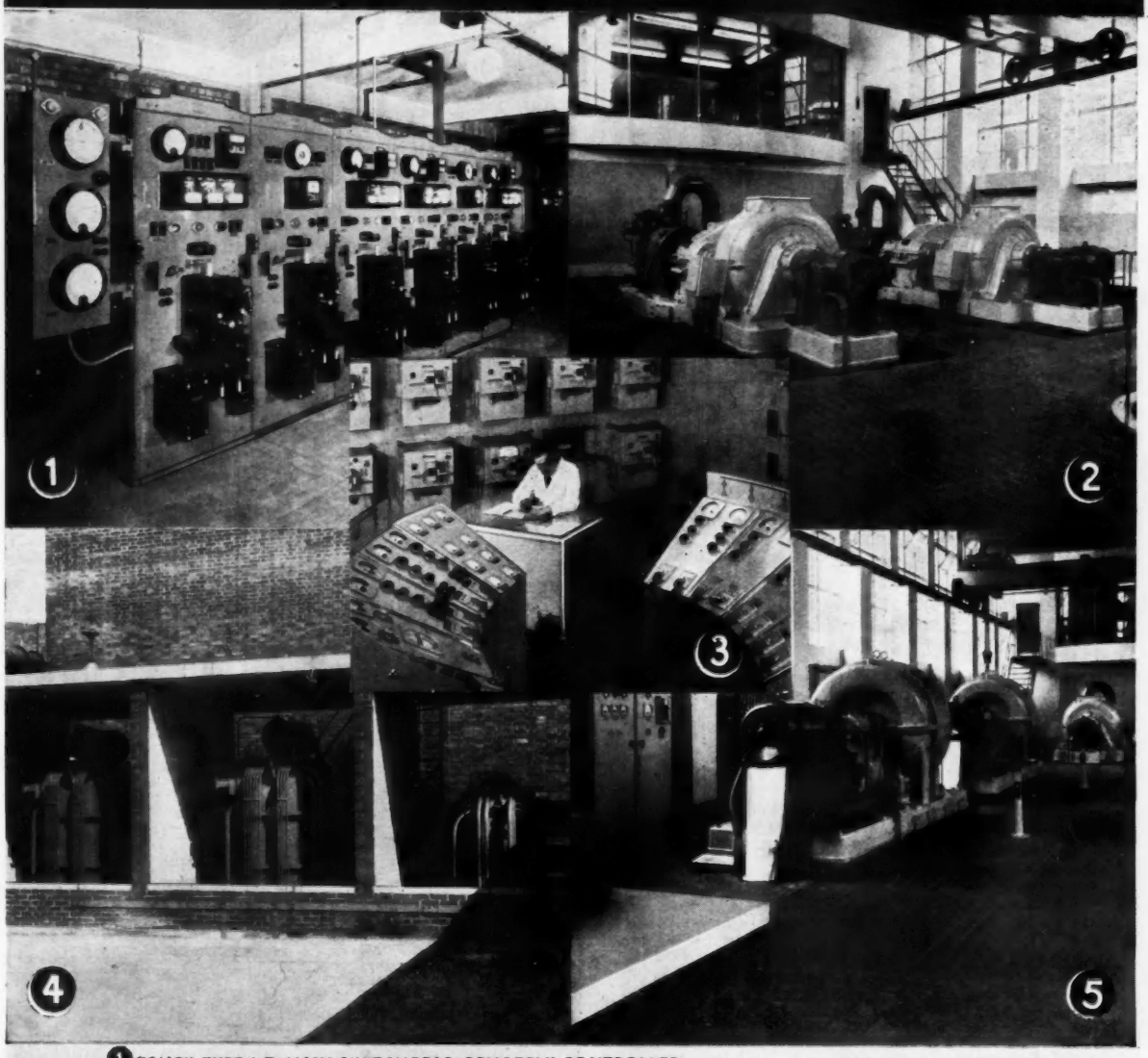

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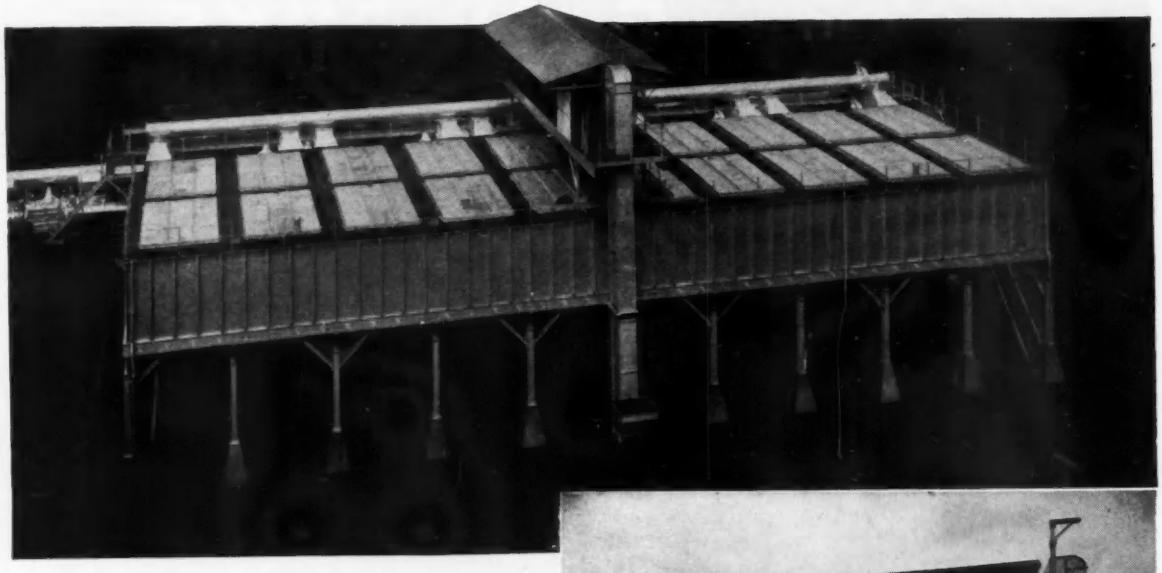

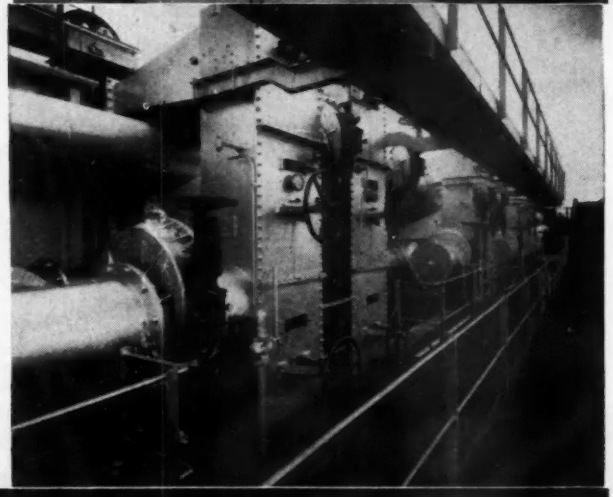

A complete Purifier installation erected for the North Western Gas Board, Wigan Undertaking. The Plant consists of five M.S. Elevated Purifier Boxes each 38′ 0″ wide × 24′ 0″ long × 10′ 0″ deep, arranged in line, total length 120 feet.

Four covers are provided to each box, size 16′ 10″ × 9′ 10″.

The Purifiers are worked by means of 24″ dia. Mains.

Also fitted to the boxes are Patent Reverse and Divided Flow Valves, to the Inlet and Outlet of each Purifier Box.

The Oxide Handling Plant consists of a 15″ wide Bucket Elevator and a 24″ wide Flat Belt Conveyor capable of dealing with 28 tons of Oxide per hour.

All are mounted on a Travelling Transporter Gantry which also incorporates Four Lifting Screws for lifting the Purifier Covers.

Top Right : View on Purifier Deck showing 16′ 10″ long × 9′ 10″ wide Purifier Covers, in the fitted position, together with clamps, etc.

Bottom Right : View of Connection side of Purifiers showing the 24″ diameter Patent Reverse and Divided Flow Valves, with connecting Ducting and Valve operating Platforms.

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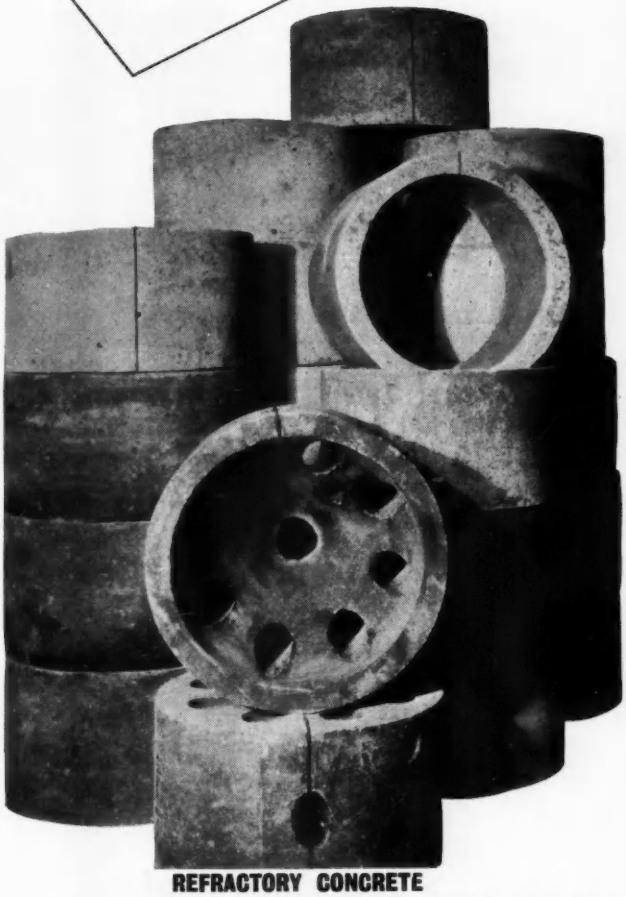

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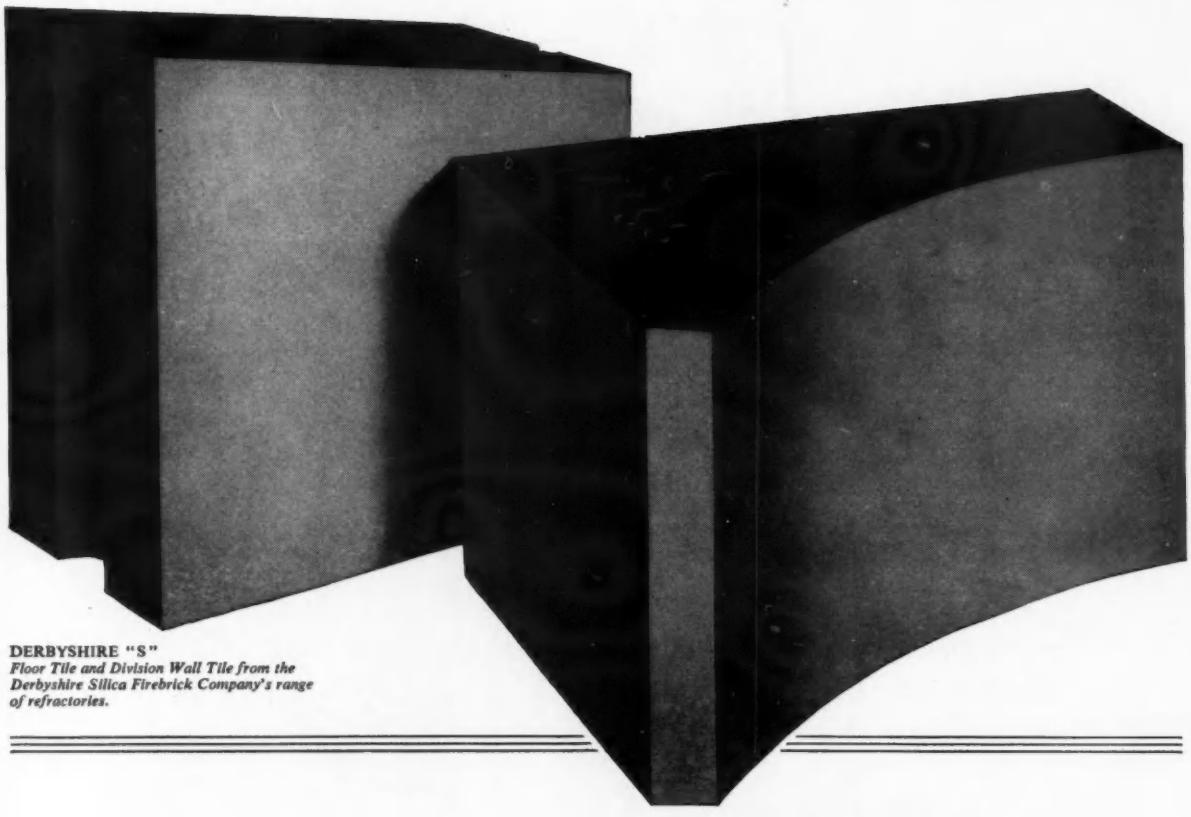

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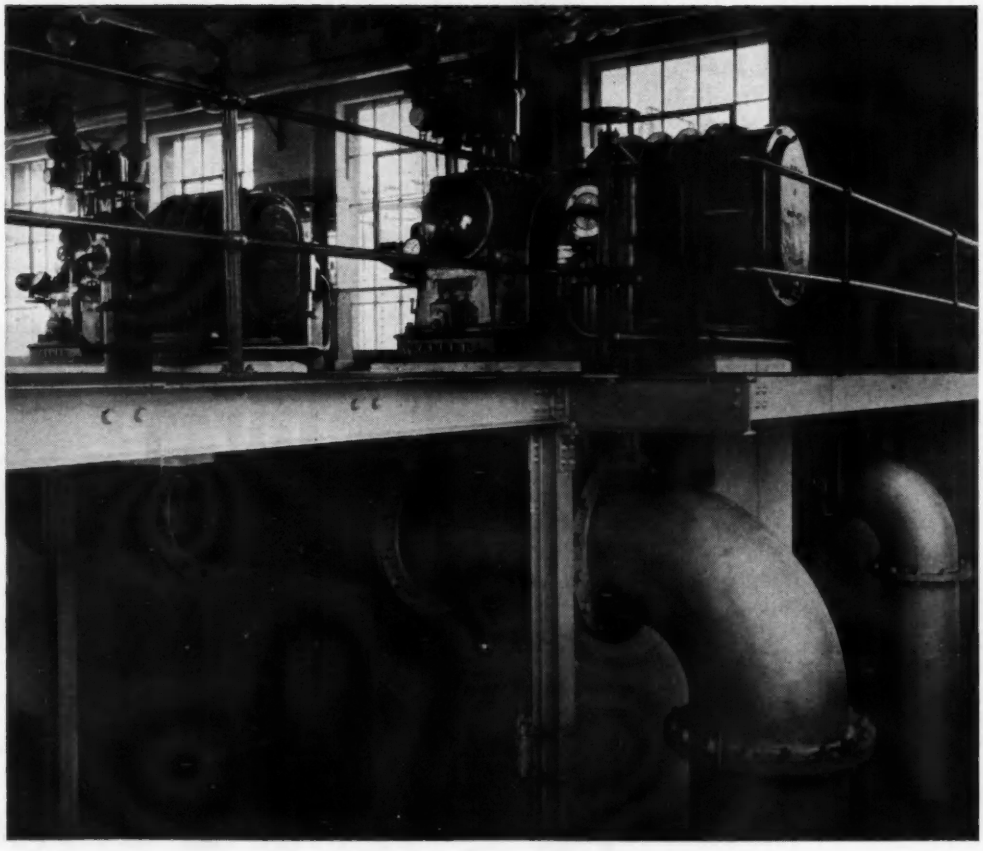

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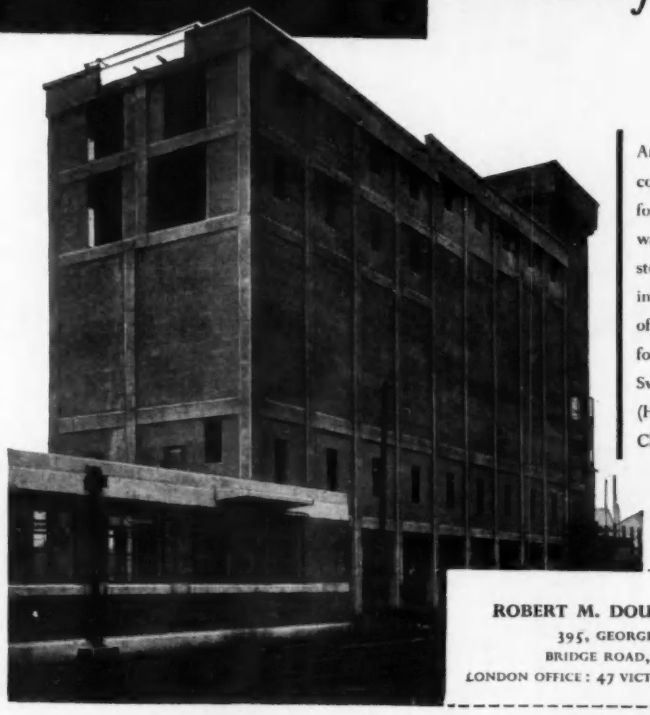

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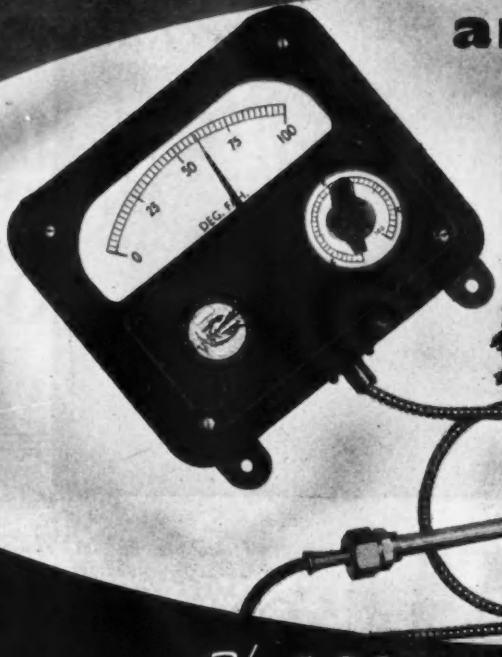

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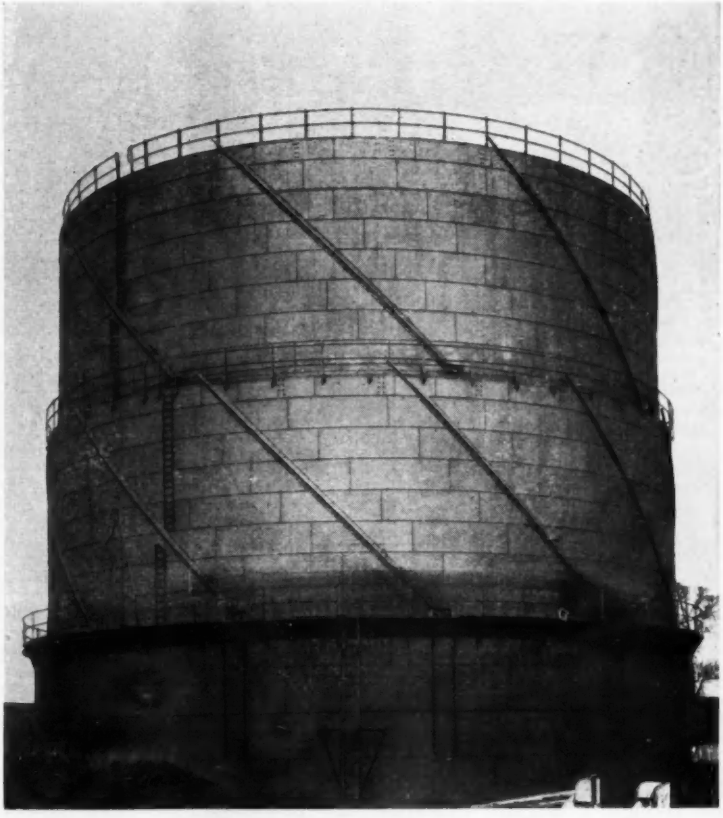

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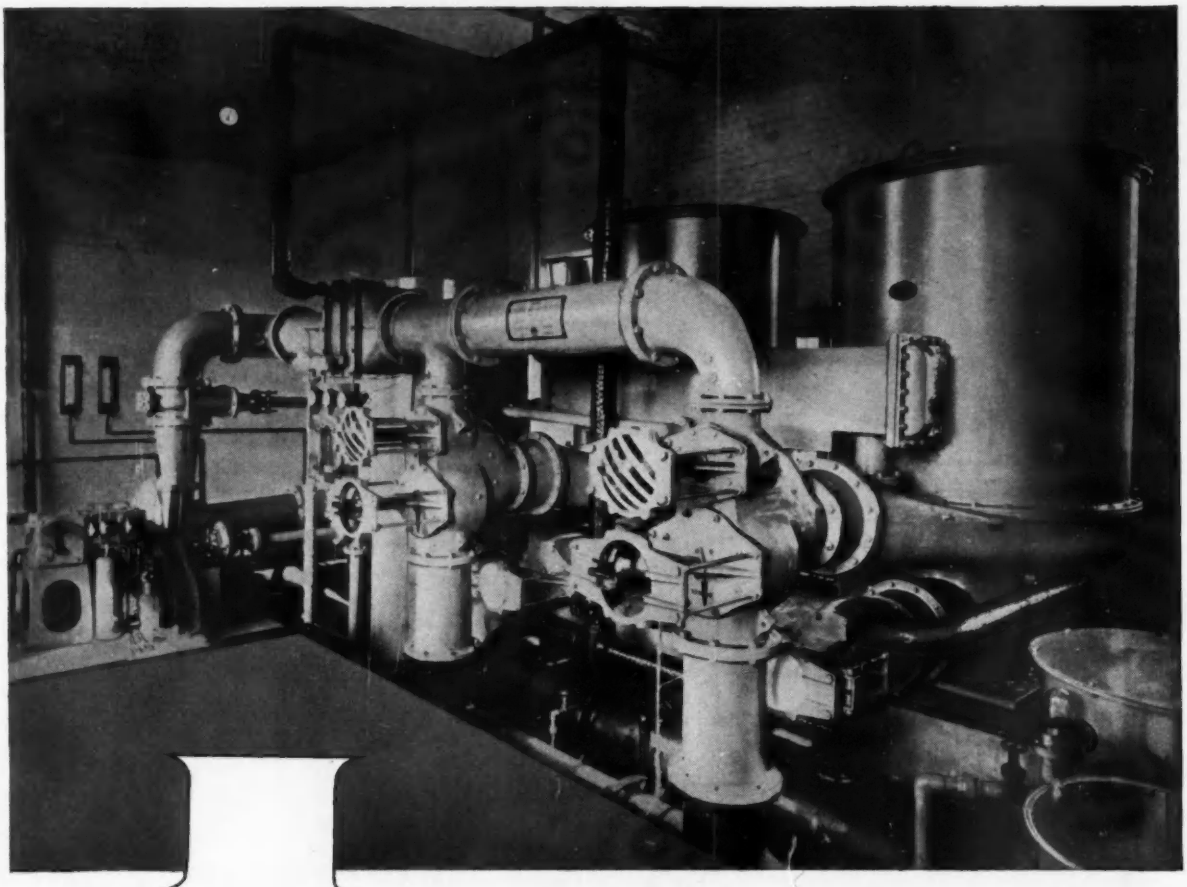

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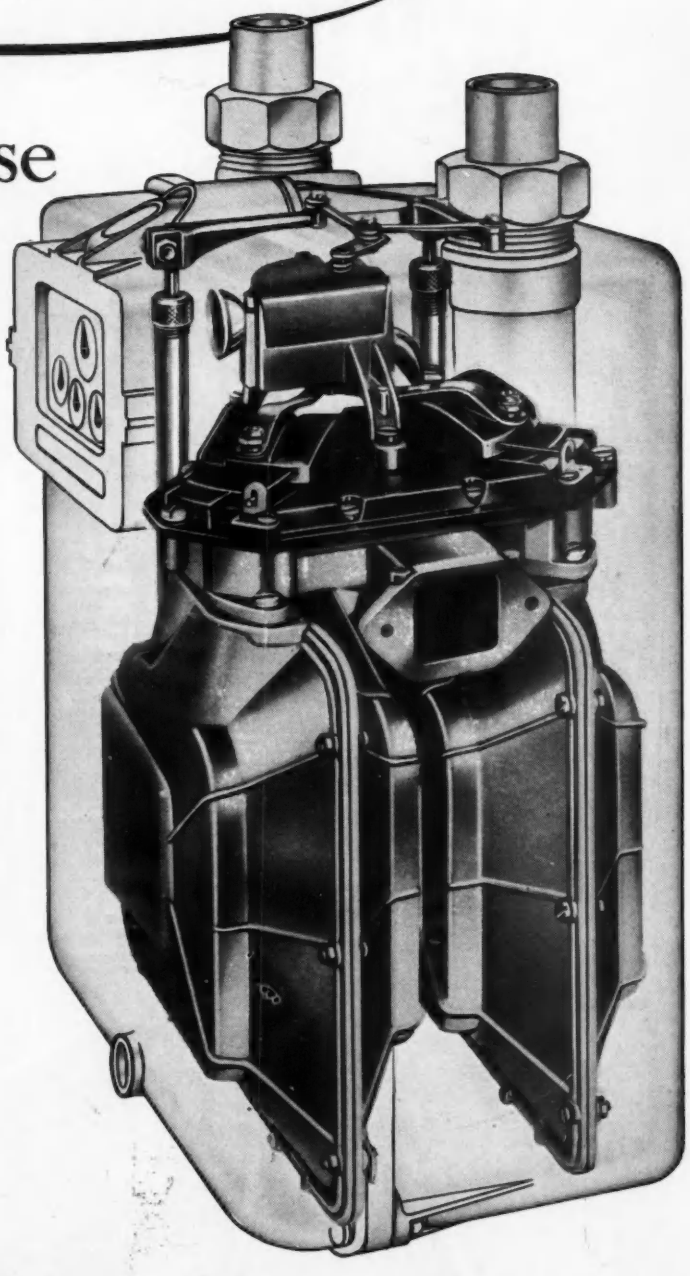

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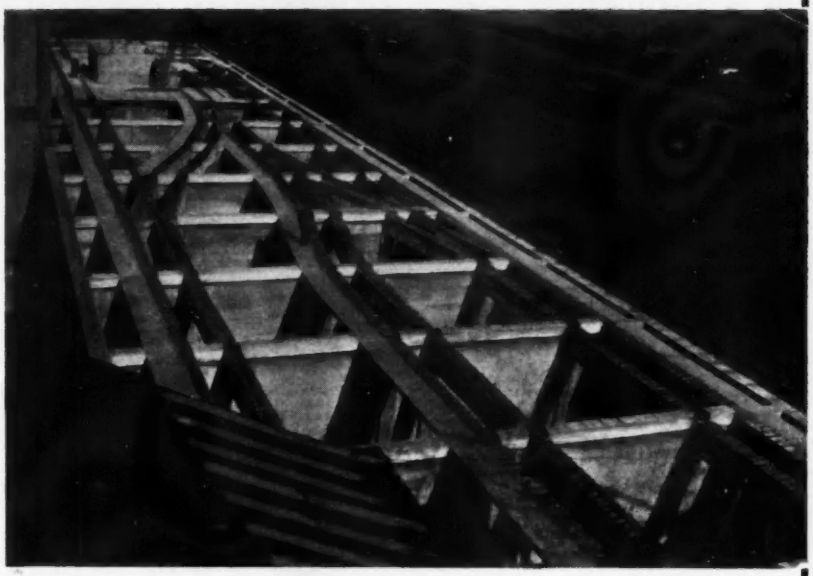
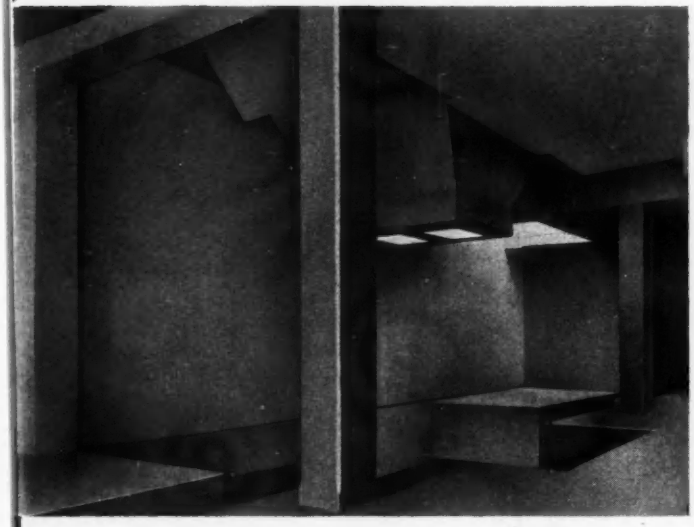


COAL STORE AT BURNLEY

GAS INDUSTRY

UNDERSIDE OF WAGON TIPPLER AT BURNLEY



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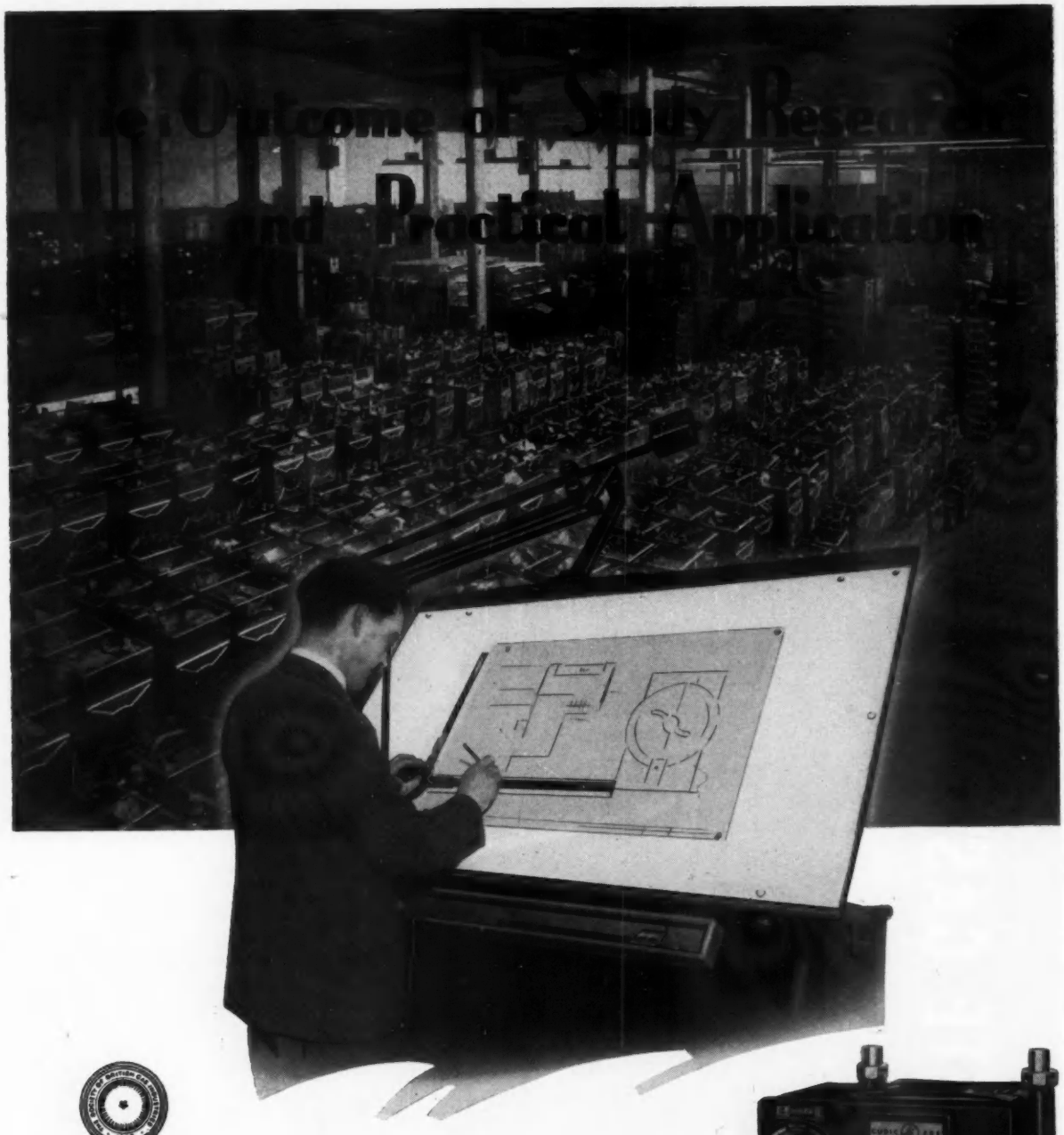

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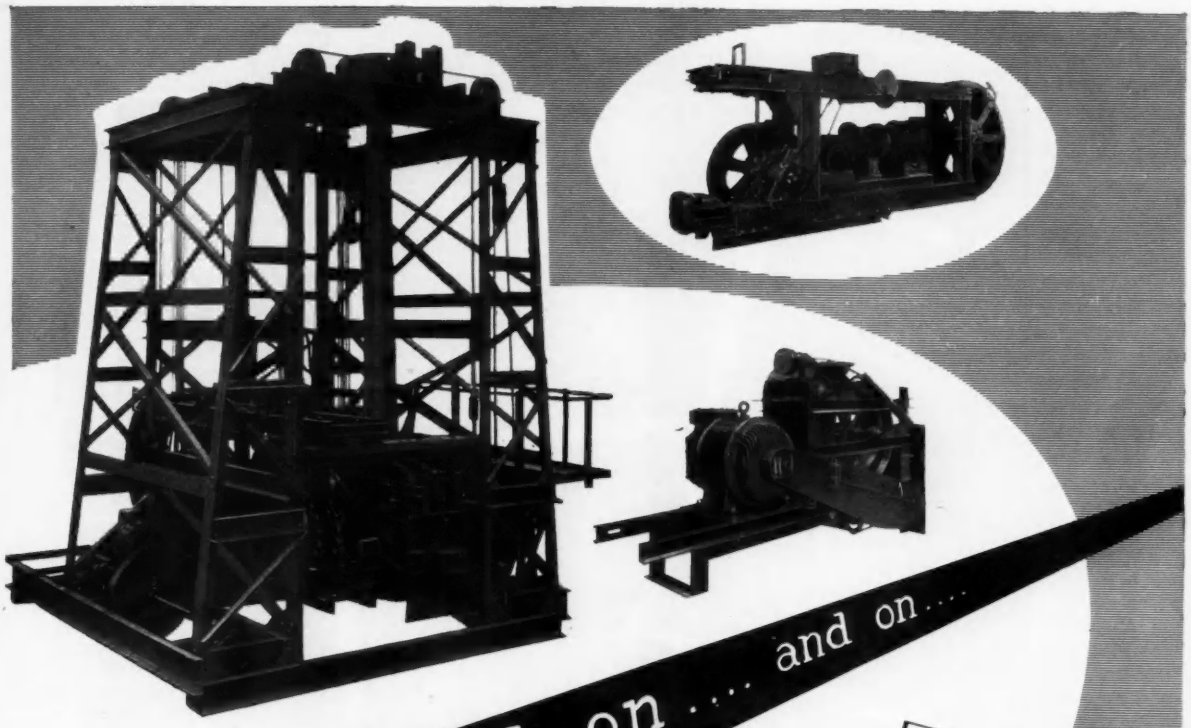

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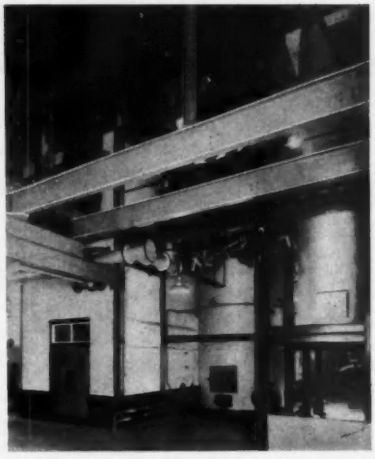

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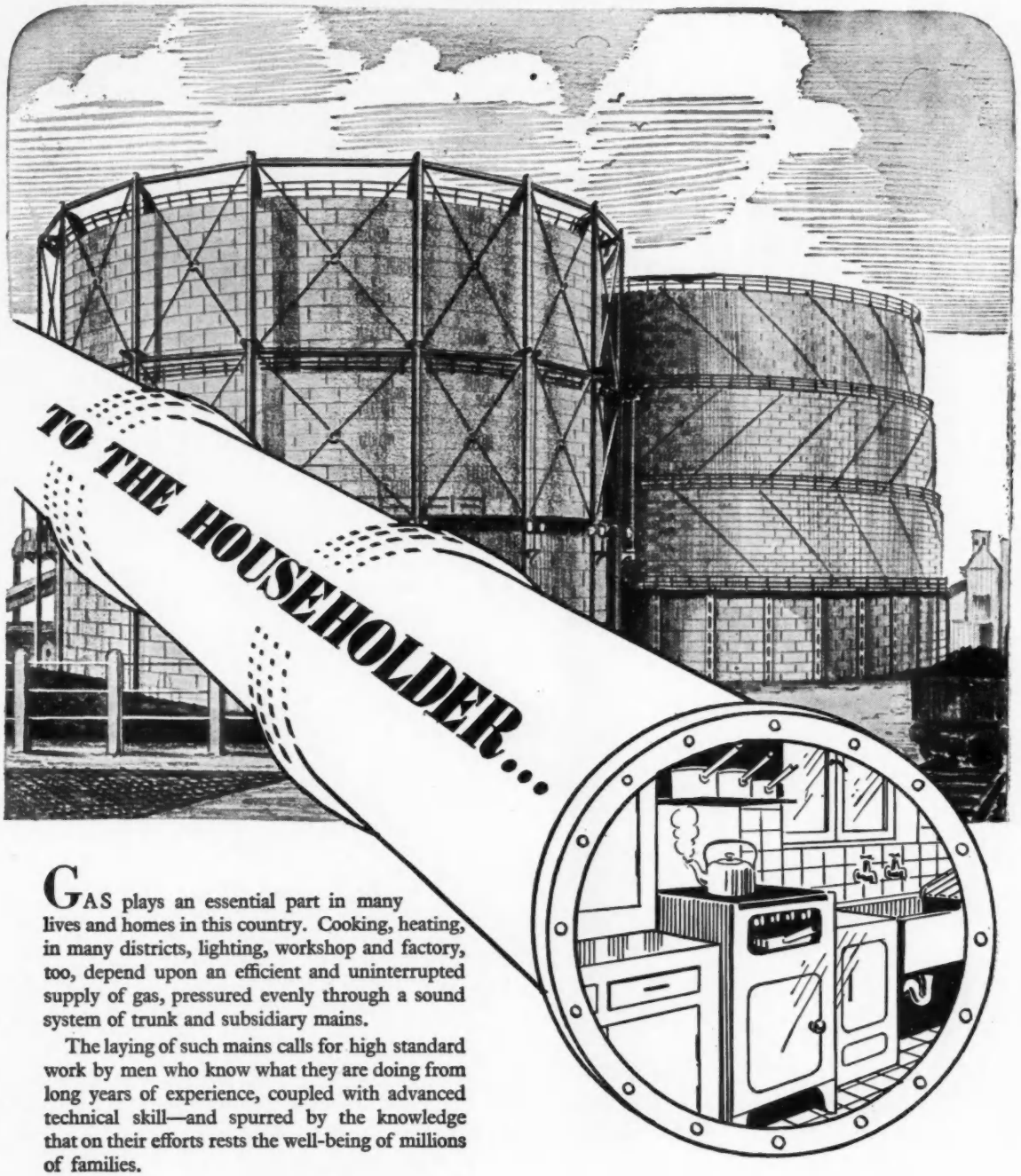

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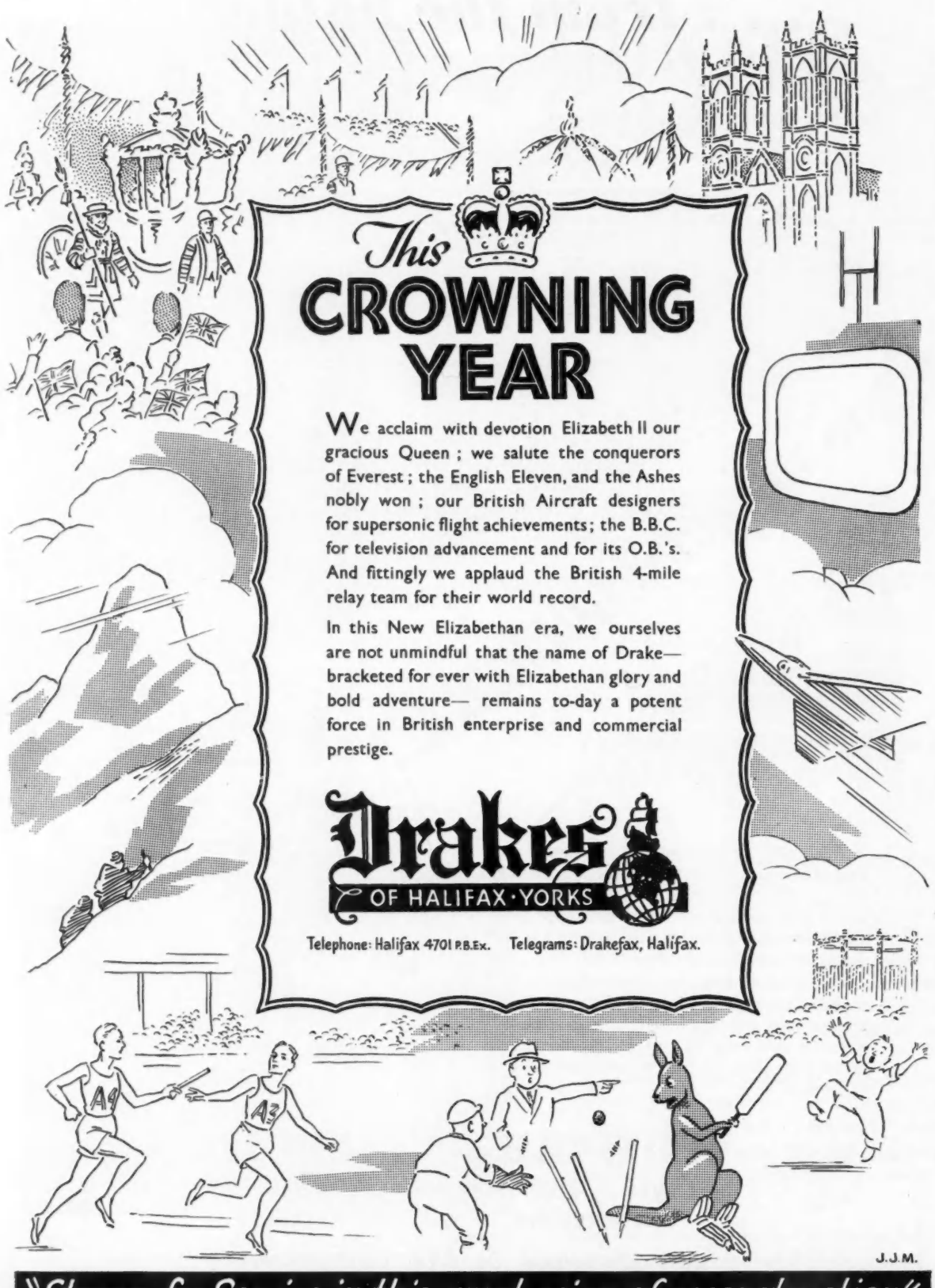

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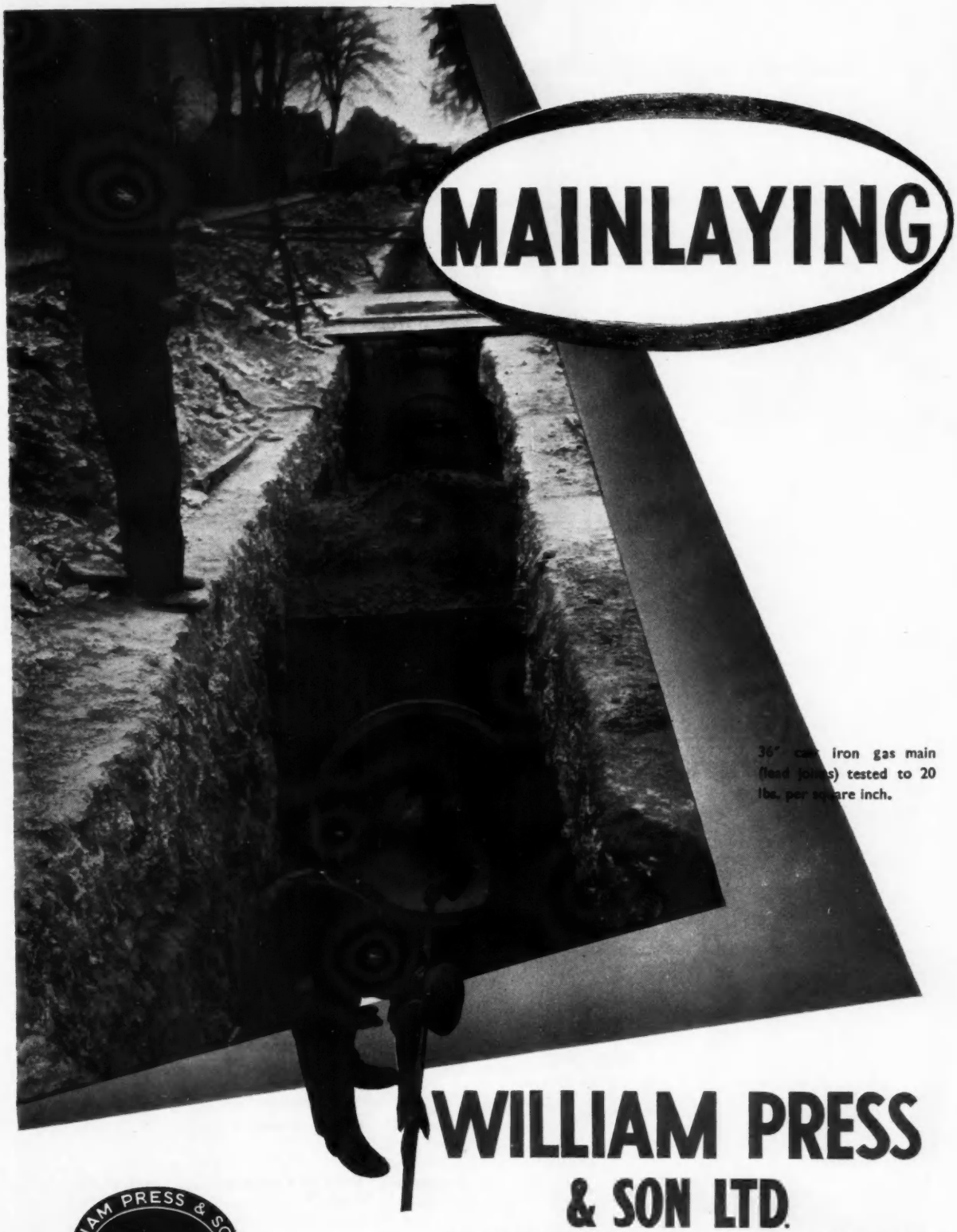

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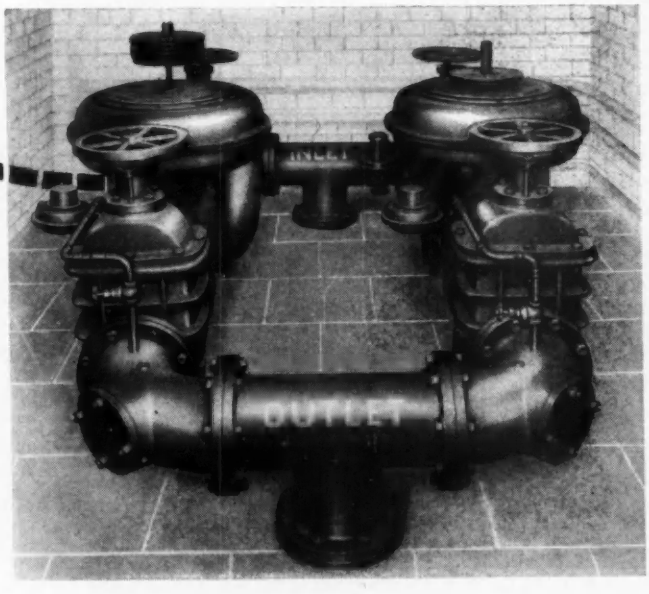

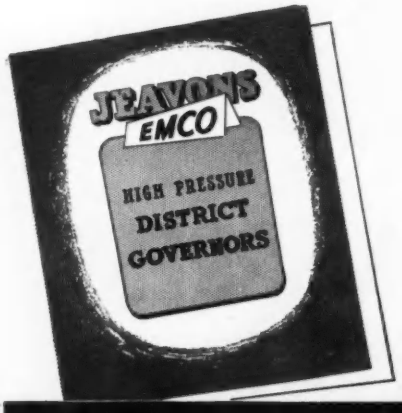

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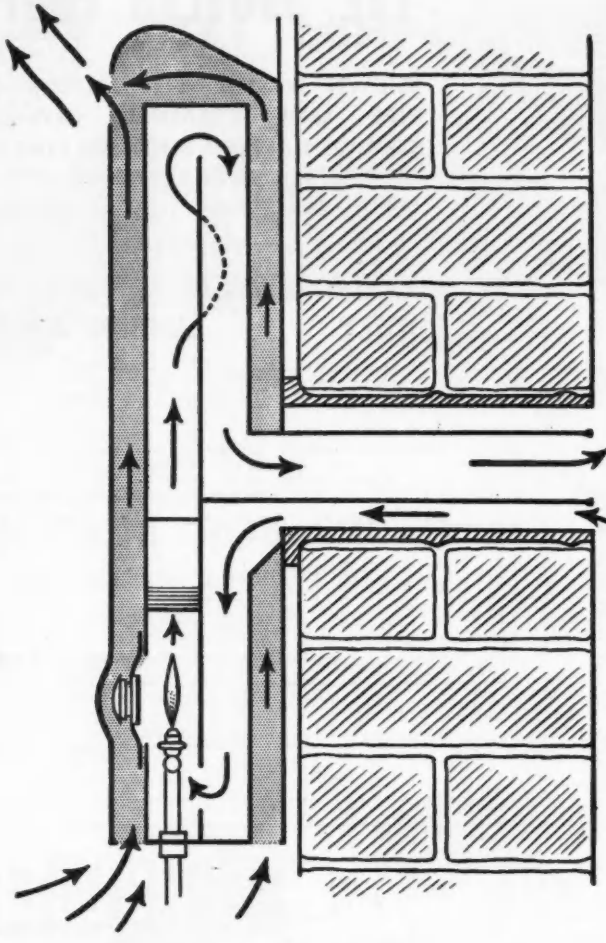

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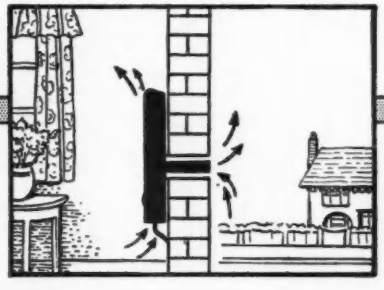

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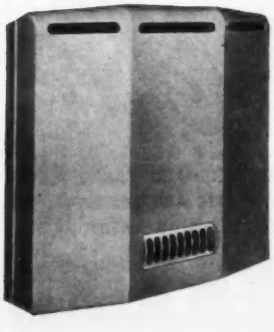

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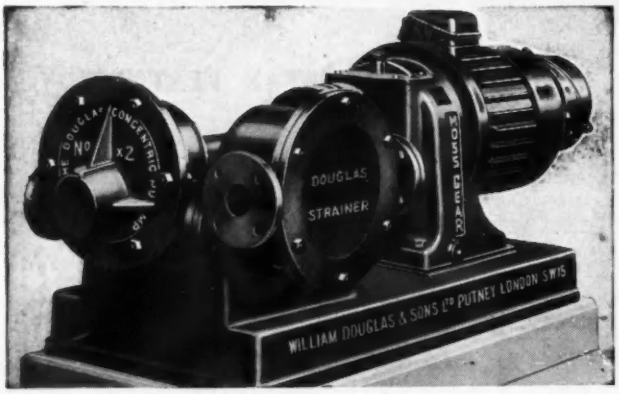

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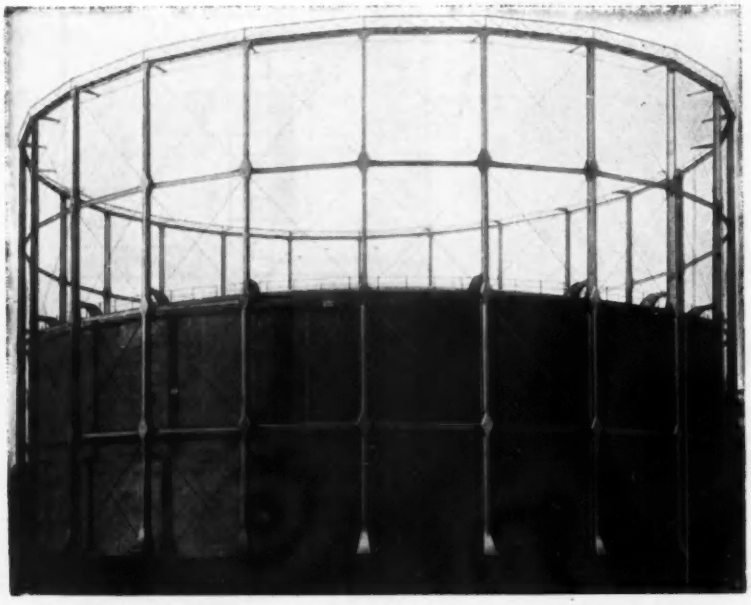

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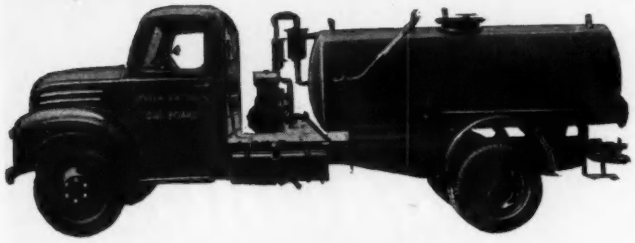

SYPHON EMPTYING OUTFIT

The vacuum syphon emptying outfit illustrated is mounted on a 4-ton Fordson chassis. A 600 gallon galvanised tank is fitted. A rotary type exhauster is driven by a 4 b.h.p. four-stroke air cooled engine, mounted on a sub-frame behind the cab. The tank is fitted with a flame-proof vent and the outfit can be used for high or low pressure syphon emptying. A large manhole at the rear allows the tank to be cleaned easily.

A sight glass is fitted to enable the operator to know when the syphon is emptied. Twenty-five feet of 1½ in. suction hose is supplied with the outfit. The outfit can be used for vacuum or pressure working.

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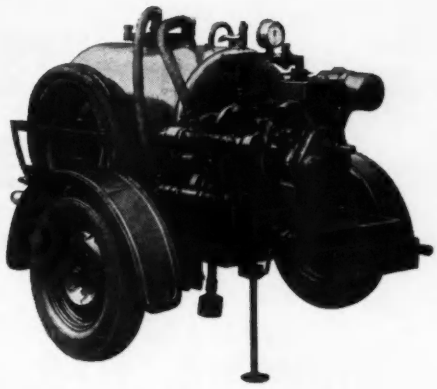

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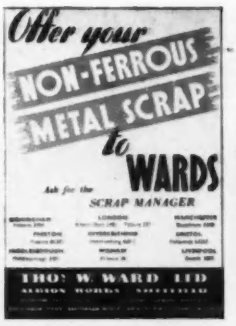

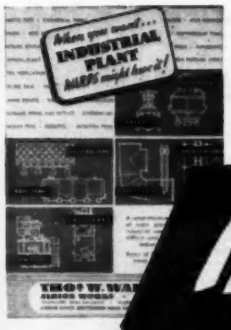

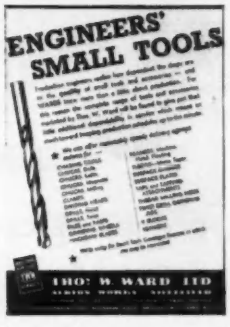

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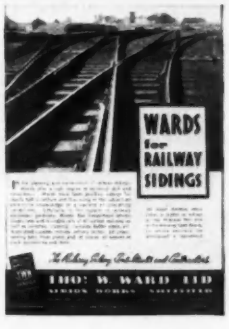

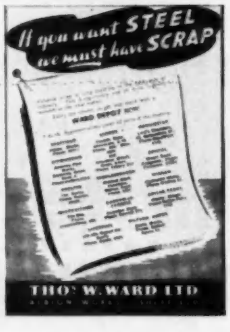

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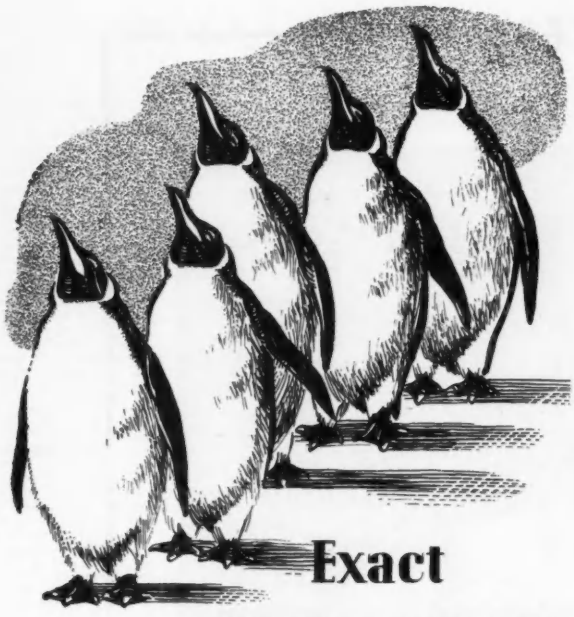

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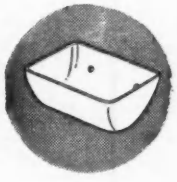

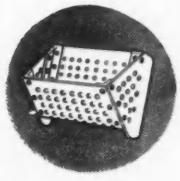

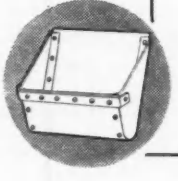

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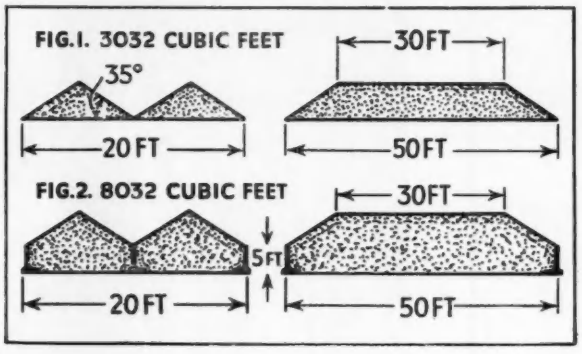

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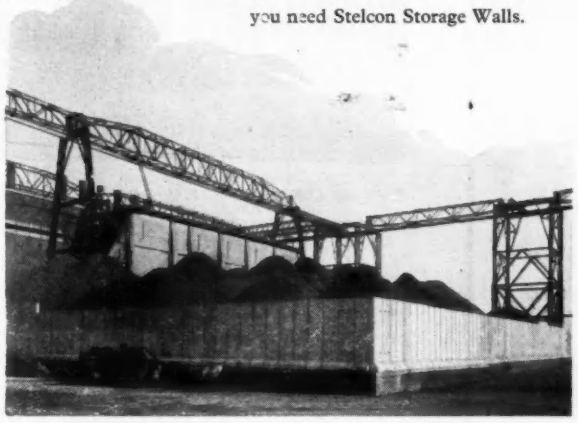

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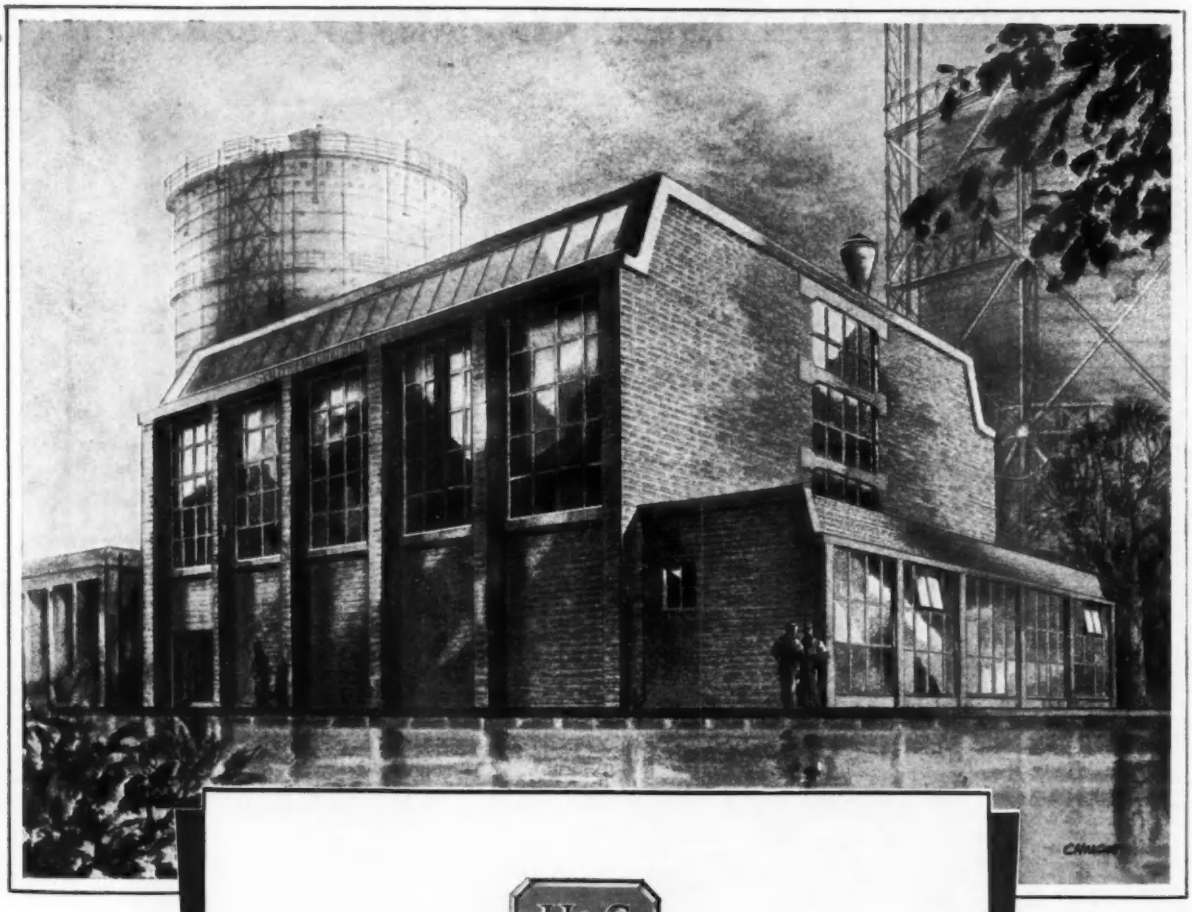

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Gas Journal

105th YEAR OF PUBLICATION

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GAS JOURNAL

VOL. 276. No. 4726 105TH YEAR December 30, 1953

—and A Happy New Year

CORONATION YEAR

As we write this introduction to the ultimate issue of the 'GAS JOURNAL' for 1953 there are forty-eight hours of the year left to spin themselves out. In many ways the year has been eventful. There has been frustration, to some extent, in 1953; on the reverse side of the coin is to be seen, for those who have time to look and reflect, great promise of things to come. For several years it has been our pleasant duty to watch and interpret the development of the gas industry. We doubt very much whether there has been a year comparable with 1953 in solid achievement. Part of this achievement is due to a more critical analysis, of what the industry does in fact stand for in the nation's economy; the major part lies in practical fruition of plans. As instance we may mention the inauguration of new gasworks at Swan Village, Birmingham; at Maelor, near Wrexham; and what are tantamount to new works at Foleshill, Coventry and at Berwick-on-Tweed. The while integration in distribution has gone hand in hand with integration in manufacture. We have had full accounts—highly interesting stories—of the integration of supply in Wales and in the North Western and South Western areas.

Has the gas industry gained in strength? The short answer is that it serves more consumers than ever it did in its history and that it becomes increasingly more efficient in its overall service to the public. In the meantime it is obeying the changing laws of scientific coal usage. Its research work is an outstanding example of value for money. Of course, the industry could have achieved more if it had not been so handicapped by the steel situation. Steel allocation to the industry has been far and away below what the industry requires to fulfil its obligations in the national interest. That has been one major handicap. The other major handicap has been the non-stop increase in the price of coal. Increases during 1953 will cost the industry about £9 mill. in a 12-month period. As coal costs ascend, so does the price of freightage—a consideration well over £1 mill. And, looking through a glass darkly, we discern no betterment in 1954. Naturally, prices of coal, gas, coke, electricity, and oil will become relative; this relativity will, we suggest, condition fuel usage. More and more will the incidence of convenience come into play.

We have headed this introduction to our review of 1953 'Coronation Year.' The gas industry—as our Coronation Number of the 'GAS JOURNAL' showed so palpably in word and picture—owes a very great deal to the interest which has been taken in it by the Royal Family. How pleasant it is to look back on the past twelve months and proudly to record the patronage accorded to the Institution of Gas Engineers by the Queen, the personal interest shown by the Duke of Edinburgh in gas-making—his visit to the Ponders End works of the Eastern Gas Board, for instance—and the opening of the Gas Sales and Service Conference in March last by the Duke of Gloucester. These gracious gestures of the Royal Family mean much to the morale of our industry.

Thousands of words have been directed to national fuel policy and thousands and thousands of words have been written about the subject during the year. We hope that this calligraphic and verbal spate will eventually result in blossom and fruit. That we can envisage no blossom, let alone fruit, in 1954, is perhaps beside the point. There is an awakening of sentiment and an appreciation of the fuel-odds which face

us. Technical argument during the year has been tossed gently from one marginal cost to another. The limelight has been directed to smog in an endeavour to penetrate what at the moment is impenetrable. But public conscience is being pricked and public action is being aroused. We think that the weight of opinion gathered in 1953 will reduce the tonnage of dirt and grime deposited in 1954 on our public buildings, our houses, and our sheets and shirts and collars. Afterwards, when more scientific light is shed on the darkness, and the practical support of fuel economy—already in evidence—becomes more widely felt, the dirty conditions of today will be rapidly diminished.

The research and technical side of the gas industry has never known better team-work and it is almost attaining international class. It is quicker on the ball and its finishing tactics are altogether smarter. The research game is now becoming quite a pleasure to watch. We have, for example, had first-class stories of advancement in the techniques of liquid purification, organic sulphur removal, oxide purification. Moreover, these techniques have not been allowed to emulsify in the laboratory. They have been carried boldly into the open. We have had stimulating accounts of new processes for the complete gasification of coal and for the gasification, with or without the aid of catalysts, of oil of different hues. We have been encouraged by the hopes held out in regard to the discovery of natural gas—the million pound prospect sponsored by the Gas Council—to say nothing about the successful application of butane and propane, and drainage of methane from the coal face. Apart from the technical and scientific aspect we have had many important discussions on the health of the industry and its general well-being. On the financial side, accountancy has had a good run for its money. A more detailed picture is presented on later pages. *Vale*, 1953. It has been a good year for the gas industry. *Ave*, 1954.

LACK OF SCIENCE TEACHERS

There is a serious dearth of graduates entering the schools to teach science and mathematics. There is, moreover, concern about the quality of teachers of these particular subjects—partly because of teaching ability and partly because of academic standards. It would be unwise to make too much of a comparison between two single years, but there must be some significance that the men with first-class Honours degrees fell from 14.7% of the total in 1938 to 4% in 1953. These figures are given in a report to the Minister of Education by the National Advisory Council on the Training and Supply of Teachers. The Council is, of course, right in regarding this shortage as constituting a national problem, for, unless enough men and women with suitable abilities and qualifications come forward to teach in schools, there must be serious long-term effects both on the general quality of education of the nation and on the future supply of scientists and technologists. The situation is that there are three major competitors for the services of the mathematics and science student who has just graduated—industry, the universities, and the schools. As an approximation, though it seems to be a reasonable picture, 45% of the men, after obtaining a first degree, remain in the universities for purposes other than taking a post-graduate course in education. Combined with industrial demand this clearly affects the supply to schools, which at present attract only about 15% of the men Honours graduates. Industry is, in fact, taking at least one-third of the outflow of men graduates at first degree level. It also takes a good proportion of those who have just completed a period of post-graduate research. Employers are becoming more selective, and the industrial demand for physicists and chemists is strong. Not unnaturally, financial prospects are a main factor in the situation. There can be little doubt that prospects are markedly better in industry than in the schools. The Federation of British Industries is to hold a conference of industrial and educational interests early in 1954 to consider this problem of the shortage of science teachers.

BEST COAL OUTPUT SINCE 1938

It is fitting that we should be able to record in our Annual Review Number that more coal was produced in the United Kingdom during the last full working week of the year than in any week since February, 1938, before opencast working had started in this country. The deep-mined output was 4,772,200 tons, the highest week's output since Dunkirk, and 230,700 tons were won from opencast workings, making a total of 5,002,900 tons, compared with the highest pre-war total of 5,020,800 tons in the week ended February 26, 1938. In a message of congratulation to the miners and all concerned, Mr. Geoffrey Lloyd, Minister of Fuel and Power, remarked that stocks are still over 19,000,000 tons and for the time of year this is the highest level ever recorded by the Ministry. This has come about partly as a result of better production in November and December and partly because of the exceptionally mild weather so far this winter. Since the beginning of November consumption has been lower than last year, but production at the pits in the same period has gone up by more than 850,000 tons. Despite the recent improvement in coal output, the total for the first 50 weeks of the year is much less than a year ago—to be precise, 216,915,600 tons (including 11,375,900 tons opencast) compared with 218,601,400 tons (11,859,400 tons opencast)—so that the total for the year will probably fall short of that for 1952. Output per manshift has remained about the same; the average for 1953 is 1.21 tons for all workers and 3.14 tons for workers at the coal face, against 1.19 and 3.15 tons respectively in 1952. The latest figures for coal stocks at gasworks show a total of 3,216,000 tons, representing 5.1 weeks winter consumption.

A SUCCESSFUL POACHER

Seventeen-year-old Sheila Johnson, employed in the sales department of the North Eastern Electricity Board at York, where she is learning to become a demonstrator in all electrical domestic appliances, including cookers, washers, and cleaners, is reported to have been surprised and a little worried when she found she had won first place in a competition for cooking with gas. To win the local round of the Gas Council's National Youth Cookery Competition at the gas showrooms at Davygate, York, she cooked macaroni and cheese to beat girls from Malton, Thirsk, and Driffield. When informed of the result she said she only entered for experience and never thought she would win, so she did not tell her employers—and she wondered what they would say. She need not have worried about her entry in a rival organisation's competition. Mr. W. A. Crocker, the York Area Manager of the Electricity Board, was among the first to congratulate her, adding that her experience would help her in her training as a demonstrator, and that she had quite a bright future ahead of her.

INDUSTRIAL BUILDING CONTROL RELAXED.—The free-limit for building work in industry and agriculture will be raised from January 1, 1954, to £25,000. From the same date applications for building licences for all classes of buildings except housing should be sent to the Regional Licensing Office of the Ministry of Works.

Personal

MR. T. BRYAN, formerly Assistant Electrical Engineer, has been appointed Electrical Engineer for the Birmingham and District Division of the West Midlands Gas Board.

MR. H. F. GODDEN, M.C., is retiring from the National Benzole Co., Ltd., after over 34 years with the company. He joined the company in 1919 as London Divisional Manager, after serving throughout the first world war with the Norfolk Regiment and the R.A.S.C. Later that year, he was one of the team of drivers who took part in the 10,000-miles trial organised by the A.A., as a result of which benzole was firmly established as a motor fuel. In 1921 he became motor transport and equipment manager. He inaugurated the motor repair centre at Willesden. Five years later he was appointed distribution manager. Mr. Godden was seconded to the Petroleum Board 1939-1945, and appointed assistant to the Chief Operating Officer, being responsible for motor transport and bulk storage.

Obituary

MR. E. HARRISON, Manager of the Cleveland by-products works of Dorman Long and Co., Ltd., Middlesbrough, has died suddenly at the age of 62. Mr. Harrison had been with Dorman Long since leaving school at the age of 14. He became manager of the coke ovens at the Acklam Works, and some years ago was appointed manager of the Cleveland works by-products plant.

The Late G. J. Clark

MR. T. F. C. POTTERTON writes: It is with feelings of great regret that I notice in your columns the announcement of the passing of MR. G. J. CLARK, whose contribution as an officer of the Gas Light and Company, and later at Watson House during the important stages of development in the gas water heating field, was fully appreciated. His counsel and guidance in the finer technicalities of the disposal of products of combustion and many important issues were valued in no small measure and his many friends who have survived him will recognise the devoted service he gave over a number of years, and feel his loss. The sympathy of us all is extended to his widow and likewise to his son, Mr. L. J. Clark, who we are all pleased to know is following his eminent father in the gas industry.

Diagrammatic posters and giant photographs depicting the Board's progress since vesting date were shown by the North Western Gas Board on December 14 at the first meeting of the Macclesfield, Bollington, and Congleton District Committee of the British Productivity Council. Among the points of interest presented in pictorial form were the yields of gas, coke, and tar from each ton of coal carbonised; progress of gas, coke, and appliance sales; employee productivity; consumers served per employee; comparative gas prices; and price increases compared with retail price index coal prices and wages. The displays, first shown at the Board's annual conference at Southport in October, have been on tour in the area.

Diary

Dec. 31.—NORTH THAMES G.C.C.: Westminster City Hall, Charing Cross Road, 2.30 p.m.

Dec. 31-Jan. 13.—SCHOOLBOYS' EXHIBITION, Horticultural Hall, Westminster, Gas Council exhibit.

Jan. 1.—INSTITUTION OF GAS ENGINEERS: Christmas Lecture for Juveniles, J. E. Davis, O.B.E., on 'The Movement of Gas,' Sir John Cass College, Jewry Street, Aldgate, E.C.3. 2.30 p.m.

Jan. 4-5.—INSTITUTION OF GAS ENGINEERS: Christmas Jubilee Lecture, Frank Brinsley. Bournemouth Technical College.

Jan. 5.—MIDLAND JUNIOR GAS ASSOCIATION: 'Gas Accounts and Finance.' R. L. Shaw (Dudley); Staff Mess Rooms, Council House, Birmingham.

Jan. 5.—EAST MIDLANDS G.C.C.: Meeting, Victoria Station Hotel, Nottingham, 11.30 a.m.

Jan. 5.—SOUTH EASTERN G.C.C.: Caxton Hall, Westminster, 11 a.m.

Jan. 9.—SCOTTISH JUNIORS (EASTERN): Short Paper Day at Dundee.

Jan. 9.—YORKSHIRE JUNIORS: 'The Training of Main and Service Layers,' R. H. O'Neill, Distribution Engineer, Huddersfield/Halifax Group, North Eastern Gas Board. Stratford Arms Hotel, Wakefield, 2.30 p.m.

Jan. 14.—MANCHESTER JUNIORS: Short Papers for the 'F. Johnstone' Prize.

Jan. 15.—SCOTTISH JUNIORS (WESTERN): 'Some Aspects of Consumer Service,' W. A. Green, Paisley.

Jan. 15.—LONDON JUNIORS: 'Gas to Crawley and other Distribution Problems in New Towns,' J. E. Steele, South Eastern Gas Board.

Jan. 18.—EASTERN G.C.C.: Connaught Rooms, Great Queen Street, Kingsway, W.C.2.

Jan. 19.—LONDON AND SOUTHERN SECTION, I.G.E.: 'Steam and Power at Bow Common,' A. F. Grant, North Thames Gas Board.

Jan. 20.—YORKSHIRE JUNIORS: 'Review of Town Gas Production,' A. F. Cottrell and T. W. Austen, Woodall-Duckham Construction Co., Ltd. At Bridge Street, Leeds.

Jan. 20-29.—HOTEL RESTAURANT AND CATERING EXHIBITION, Olympia. Gas Council Exhibit.

Jan. 27.—EASTERN JUNIORS: 'Distribution Problems,' R. O. Emmony, at Hitchin.

Plane for Urgent Exports

ENTERPRISE of British manufacturers and exporters in meeting urgent overseas demands has again been in evidence. Faced with the need for a rapid delivery to Brussels of a large consignment of oil heaters, food mincers, and gas burning appliances, John Harper & Co., Ltd., Willenhall, used a specially chartered Pan American four-engined D.C.4 aircraft. It took off from Elmdon Airport, Birmingham, with a cargo totalling over six tons, including 1,200 No. 4012 'Beatrice' oil heaters urgently required to meet seasonal demands, and the goods arrived in the Belgian distributors' warehouse the same day. The normal transit time by rail and sea would have been 14 days. Harper products have already been flown to Turkey, United States, Canada, Sweden, and Holland.

ANY COMMENTS ?

THIS DAY
in London's past

by PETER JACKSON

Gothic Gas Meter

December 19, 1848.

"A NUMBER of eminent persons inspected the new gas meter for the Houses of Parliament. Far exceeding in dimensions and artistry anything before attempted, this almost stupendous piece of mechanism was in the form of a hexagon, ten feet high, and designed in the Gothic manner. It was, therefore, an ornamental as well as a useful addition to the Houses. The castings of the ornamentation were remarkably sharp, and included the name of the patentee, the title of the Chartered Gas Company, and the royal arms."

"An English Almanac."

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Eastern Juniors Visit to Dewrance & Co. Ltd.

Reconstructed Works in Great Dover Street.

DESPITE the murkiness of the day, a very good attendance was recorded when the Eastern Junior Gas Association visited the Great Dover Street, London, works of Dewrance & Co., Ltd. The visitors, led by their President, Mr. F. J. Denny, spent a most interesting afternoon touring the heavy and light machine shops, automatic machine shop, assembly shop, and pressure gauge shop which covered the production of both high and low pressure pipeline valves.

The origin of Dewrance & Co., Ltd., has been somewhat obscured by time, but there is little doubt that an engineering concern was in existence on the Great Dover Street site in the 1830's; and from this early beginning the Company emerged under the guidance of John Dewrance, father of the late Sir John Dewrance, in 1844. The elder Dewrance was one of the early railway pioneers, and he obtained the right to manufacture Babbit's metal in this country. Bourdon's Patent covering improved measuring devices was filed in 1849, and within a year a licence was obtained for the sole English rights to manufacture the Bourdon type tube.

In 1875 the company introduced the asbestos packed cock, the packing of which still forms part of the routine training of naval engine room personnel.

The late Sir John Dewrance took over the control of his father's business in 1879. Under his guidance the pioneer work of his father continued and a number of improvements in the design of boiler mountings and steam fittings were introduced, such as renewable seated valves, automatic valves in water gauge arms, &c. The firm were the first in this country to develop a glass toughening process employed in the production of glass protectors for water gauges and water level indicators, and were also pioneers in the use of solid steel forgings for a wide range of fittings, first exhibited at the Wembley Exhibition in 1924. Today the production of forged steel fittings is a major activity at the Dumbarton Works.

The change of the organisation to a private limited company in 1937 was unfortunately followed by the second World War, during which time many of the new designs and techniques in the development stage were held in abeyance in order to deal with the more urgent work of munitions.

In 1945 normal activities returned and in the following year a new and unique design of parallel slide valve with internal pressure held cover was introduced and which ultimately featured directly deposited seats.

The following years saw the introduction of the Dewrance-Yarway impulse steam trap, Dewrance-Yarway remote liquid level indicator, Dewrance-Yarway Gun-Pakt expansion joint, and subsequently the range of Dewrance-Consolidated safety valves.

Today energies are directed to maintaining the Company in the forefront of boiler mounting and valve production. To this end the works are being reconstructed and equipped with the latest machine tools; and it will be noted that the departments completed embody the latest methods of machining and modern plant layout.

The progressive spirit of the firm can be judged by the fact that, when the organisation was founded, a pressure of 50 lb./sq. in. saturated steam and equivalent temperature of 298°F. were considered high, whereas today the firm supplies steam fittings for pressure up to 2,500 lb./sq. in. superheated to 1,065°F.

It is interesting to recall that at its inception the covered area of the works was 1,000 sq. ft. with approximately 30 employees. Today the covered area of the works is 7½ acres with approximately 1,500 employees.

Camborne Works Closing Down

WHEN the South Western Gas Board closes down the gas manufacturing plant at Camborne and introduces a bulk supply from neighbouring works a 120 years' link with the industrial life of the town will be broken. It was only a few miles away, at Redruth, that William Murdoch first used gas as an illuminant in 1792, although it was not until 1834 that Camborne was lit by gas.

Reviewing the history of the Camborne undertaking in a recent issue of the *Cornishman*, T. R. Harris recalled that early in 1834 Richard Richards, a Quaker, erected the original works in Gas Street. In October, 1834, the working of more retorts was being undertaken: 'in order to supply the increasing consumption of gas, as what we have now in use,' wrote Richards, 'will but with difficulty supply the present consumption and the evenings are lengthening fast.'

In a directory of 1847, J. S. Bickford and G. Smith were listed as the proprietors of the gasworks. On January 1, 1851, Bickford and Smith issued a circular from the Gas Yard, Camborne, in which they informed their friends that 'a partnership, as the Camborne Gas Co., has this day been dissolved by mutual consent' and: 'our friend and relative Mr. W. B. Smith will in future conduct this business on his own account.'

On the same day, W. Bickford Smith, son of George Smith and nephew of J. S. Bickford, issued a statement saying, 'I have this day taken the business hitherto carried on by the Camborne Gas Co., and I beg to solicit your continuance and support, assuring you that no exertion shall be spared to give satisfaction to those who may favour me with their orders and confidence.'

W. Bickford Smith later became Member of Parliament for Helston and settled at Trevarno.

During the winter of 1870-1, a new works was erected at Tuckingmill. The buildings included a large and lofty retort house, with benches of retorts, capable of producing gas to an extent of at least double the demand at that time, a coal store capable of holding 750 tons of coal, men's changing houses, sulphate house, purifying sheds, meter and governor house, coke shed, lime house, blacksmiths' shop, three stone houses, weighbridge house, foreman's dwelling house and the gas office.

In 1889 a new company was formed to acquire and carry on as a going concern the works and business of the Camborne Gas Co. For some time prior to the taking over by the limited company, which had a capital of £10,000, the works had been conducted by a Mr. John Thomas, who had agreed to transfer the whole of the property, including the goodwill of the business, the supply of gas fittings and meters in store, for £10,787, of which £7,787 was paid in cash and the balance in fully paid-up shares.

Powers were taken by the company to supply electricity to manufacturers and sell residual products, supply gas fittings and carry on the business of general gas fitters. As a result of a special cheap rate for gas used for cooking, heating and motive power, an increase in consumption over that previous to 1889 was soon apparent.

The Ministry of Materials announces that, in view of the revocation of the statutory controls on sulphuric acid the Directorate of Sulphuric Acid and Sulphur Supplies at Lacon House, Theobalds Road, London, W.C., is closing down.

The Address of the Research and Development Department of W. C. Holmes & Co., Ltd., is now Whitechapel Road, Cleckheaton, Yorks (T/N Cleckheaton 1660).

CORONATION YEAR

REVIEW OF 1953

Gas Council and Area Boards

LATER historians may recall 1953 as a year of more than ordinary importance for the gas industry for two reasons —the start of the search for natural gas in Great Britain, and the pledge given by employers and employed—as represented by the Gas Council and the leaders of the trades unions—to promote increased efficiency in the operation of the industry. In the United States the exploitation of natural gas resources, now estimated to be sufficient to last up to another 50 years, has changed the whole face of the gas industry, and more recently there has been noteworthy development along similar lines in Italy. In Britain exploration has only just started, and we cannot say more than that preliminary investigations have led experts to feel that a search is worth while. Even if quantities of natural gas sufficient to be of commercial value are not discovered the £1 mill. which the Gas Council has committed itself to spend over the next five years will not have been wasted for the search will have at least settled the hopes and fears that have attended the natural gas question in this country for several years.

Search for Natural Gas

Natural gas in very small quantities has been produced at Heathfield, Sussex, for some years. It has also been obtained at Cousland, Midlothian, and in Yorkshire, near Whitby. Although much is known of the geological formations of the country, the object of explorations hitherto has been to discover oil, and the explorers have not been so much concerned to ascertain the existence or otherwise of structures favourable to the accumulation of gas. At the request of the Gas Council the Anglo Iranian Oil Co., Ltd., allowed its chief geologist, Dr. G. M. Lees, to prepare a report on the prospects of finding gas in this country, and while only actual exploration can answer the question, the report was sufficiently encouraging for the Gas Council to decide to carry out an extensive field investigation, in association with the Anglo Iranian Co., and its subsidiary, the D'Arcy Exploration Co., Ltd. The explorations are likely to be spread over a period of five years. Time alone will assess the importance of the steps taken this year.

The year's other highlight—the Efficiency Conference —resulted in the passing of a resolution pledging all sections of the industry to work for the improvement of efficiency in the production and distribution of gas, and particularly to the full use of the joint consultative committees set up in the industry. Here again it is too early to report 'results,' but the unanimity of the conference inspires hope for the future.

In other respects the year has been a period of further consolidation and integration, with more gas produced from less coal, partly due to higher efficiency and partly to the gasification of more oil; more extensions to grid systems and more small inefficient works closed down; and a general effort on the part of the area boards to keep gas prices steady despite rising costs. Thirteen staff pension schemes in identical terms, one for the Gas Council's staff and one each for the 12 area boards, have been established, covering members of the staff who were not previously members of any superannuation scheme and had no right to a pension, and new entrants to the staffs. They provide an option for staff members of existing schemes to transfer to one of the new schemes on terms to be determined by the Gas Council after consultation with the actuary. An attractive feature of the new schemes is the provision they make for widows and dependent children.

The fourth annual reports of the Gas Council and the area boards, published at the end of October, covered the period ended March 31, 1953, but in many respects they brought the story of the industry's progress almost up to date. They showed that all the boards endeavoured to keep gas prices as steady as possible, but the substantial increase in the price of coal last March compelled some of the boards to raise gas prices. The fact remains that gas prices generally have increased by only 75% since 1938, whereas coal costs have gone up by more than 200% and the general level of wholesale prices by 220%.

Solid Achievement

The Gas Council's report said that the year had not fulfilled all the hopes of the area boards, but 'there are solid achievements to their credit.' Towards the end of the year general economic conditions became more favourable, and there were signs that the boards could hope for at least some improvement in the supplies of steel and cast iron pipes on which the pace of their development depends.

Withdrawal of restrictions on publicity—another step towards freedom for which 1953 will long be remembered —restored to the boards a measure of freedom in the promotion of sales, and with the removal of gas water heaters from restrictions under the Hire Purchase Control Order more realistic terms can now be offered for the hire purchase of such appliances. The latest available statistics of gas sales are those contained in the annual reports, and they show a total income from gas sales of £164 mill. compared with £147.6 mill. for the previous 12 months. In terms of gas sold the respective figures are 2,524 mill. therms for 1952-53 and 2,513 mill. therms for 1951-52, an increase of 0.4% compared with one of 2% for the previous year. For all boards the average income per therm of gas sold was 15.6d., the corresponding figure for 1951-52 being 14.09d.

Depreciation

Eleven of the area boards had a total surplus of £2,542,871, and one (Scottish) had a deficit of £270,240. The aggregate result on a gross income of £281,491,223 was a net surplus of £2,272,631, compared with £1,440,916 in the previous year. The slight increase in the surplus prompted questions at the Press Conference on the annual reports as to the prospects of reducing gas prices, to which Sir Harold Smith replied that in fact that sum did not represent a profit. If the industry had depreciated pre-vesting plant at post-vesting replacement values, instead of having a surplus the industry would be faced with a deficit of something like £16 mill. to £18 mill. New plant is being depreciated at a higher rate appropriate to present costs, but that is not the case with a considerable amount of pre-vesting plant. A gradually increasing proportion of plant is being depreciated on the basis of post-vesting costs, and a gradually diminishing quantity is therefore being dealt with at pre-vesting values. Even if the £2 mill. surplus were freely available it would represent no more than 0.2d. per therm. In the words of the Gas Council's annual report, 'the margin is such that in spite of the economies which the boards are exercising, the price of gas must remain

extremely sensitive to increases in cost of production, and particularly to increases in the industry's basic raw material, coal.'

The net gas manufacturing capacity of the industry has increased over the past year by 75 mill. cu.ft. per day, or 3.2%, bringing the total to 2,385 mill. cu.ft. Thirty-four small and uneconomical gasworks were closed, bringing the total closed since vesting day to 140. Economies nave also been effected in the use of fuel and power at works. For example, savings by the East Midlands Board, amounting to £100,000 during the year, were obtained by the use of breeze instead of large coke in steam boiler installations.

Lessons from the United States

The team of 16 representatives of the gas industry which visited the United States in 1952 under the auspices of the Anglo-American Council on Productivity presented its report this year. The team was led by Mr. J. H. Dyde, then President of the Institution of Gas Engineers, and consisted of members nominated by the Gas Council and the trade unions, and the report was one of the gas industry's best sellers of the year. Mr. Dyde introduced a discussion on the report at the annual meeting of the Institution, and it has since been discussed by several of the district sections of the Institution and the junior gas associations. Alhough the decision to explore for natural gas in Great Britain had been taken before the report appeared, its references to the phenomenal growth of natural gas distribution in the United States stimulated interest in the subject, as well as in the related questions of long distance transmission and underground storage.

Local conditions in the two countries are so different that many sections of the report have only a remote interest, but the discussions to which we have listened during the year have made it evident that the British gas industry is eager to apply some of the lessons learnt in the States to the solution of its own problems. Clearly, for example, the industry needs more statistical information. It might well benefit from a greater measure of mechanisation in main and service laying, and it would probably be worth while to look again at questions of dealer co-operation and consumer satisfaction. In the United States, we are told, the aim of the appliance salesmen is consumer 'dissatisfaction,' the idea being that the best way to create a market for a new appliance is to convince the consumer that the one he has already got is out of date. America has no prepayment meters and it has very few gas appliances more than 10 years old.

The extension of gas grids and the transmission of gas at higher pressures have stimulated the study of long distance transmission of gas, and the Gas Council and the Institution of Gas Engineers are enquiring into the physical and other problems involved. Besides the gas industry team to which we have referred, America has been visited by a mission, including two representatives of the Gas Council, sent under the auspices of the Organisation for European Economic Co-operation, with the special object of studying long distance transmission at high pressures. The subject would have added importance if natural gas in commercial quantities were found in Great Britain.

Improved Efficiencies

Improved methods of working, replacement of obsolete with modern plant, closing down of small uneconomic gas manufacturing plants, and concentration of production in larger and more economic units has resulted in a substantial increase in the efficiency of gas production, to the extent that 73.65 therms of coal gas were made per ton of coal this year against 72.77 in 1952 and 71.62 in 1951. This represents a reduction in terms of coal carbonised of 440,000 tons in 1952 and a further 330,000 tons in 1953. The yield of coke and breeze has been maintained, and the improvement has not been because of any improvement in the quality of coal.

This improvement in efficiency brings us to the question of research, the underlying aim of which is to make the most economic use of the natural resources available to the nation. With the winding up of the Gas Research Board and the formation of the Research Committee of the Gas Council it has been possible to transfer to Birmingham not only the research into utilisation which was formerly conducted at Beckenham but also the main part of the work formerly carried on at Poole. Most members of the staff of the Gas Research Board have moved to Birmingham and taken up residence there as members of the staff of the West Midlands Gas Board, whose resources are available to service and to assist both complete gasification and utilisation research.

Complete Gasification

Work on complete gasification has continued to have priority in the research field during the year; the Gas Council and the National Coal Board are also studying the possibility of gasifying certain low-grade coals at Bogside, Fife. New sources of gas supply, not requiring the use of coal, are under examination. A year ago we mentioned in our annual review the 'Whitland experiment.' Since then, butane/air plants have superseded old fashioned coal carbonisation methods in two small undertakings in the area of the Eastern Gas Board. For new installations by the Wales Gas Board at Fishguard and Llanidloes it is intended to use supplies of propane.

Progress has been made during the year in the experimental use of methane drained from coal mines (primarily as a safety measure). Supplies from the Haig pit, Whitehaven, are already being distributed by the Northern Gas Board, and the National Coal Board and the Wales Gas Board have agreed in principle to a scheme which provides for an initial quantity of 600,000 cu.ft. per day to be supplied from the Point of Ayr colliery, the calorific value of which will be 980 B.Th.U. per cu.ft. This quantity when reformed will yield 1.1 mill. cu.ft. of ordinary town gas, and an economy of about 25,000 tons a year in the consumption of coal is anticipated. The methane from the Point of Ayr, a large new supply of coke oven gas from Shotton, and the output of coal gas from the new gasworks at Maelor, Wrexham, will together feed the new North Wales grid now being developed by the Wales Gas Board.

Research

The Joint Consultative Committee on Research, established by the Gas Council and the Society of British Gas Industries, has continued to study the selection of subjects suitable for research on a co-operative basis. The Gas Council and the area boards support a number of research organisations whose work bears directly or indirectly on the gas industry, including the Coal Tar Research Association, the British Coal Utilisation Research Association, the British Coke Research Association, National Benzole Association, British Non-Ferrous Metals Research Association, and the Industrial Flame Radiation Research Committee. Five Research Scholarships have been established by the Gas Council, tenable for three years in the departments of chemistry or chemical engineering at the Universities of Oxford, Cambridge, London, Glasgow, and Birmingham. The first awards were announced a few weeks ago.

Sir Harold Smith stated in October that 330,000 obsolete gas cookers had been exchanged during the year for cookers of more modern type, which meant that over a half of the 2 mill. cookers to which he referred when the first annual reports were published at the end of 1950 had now been replaced. Figures in the latest report show that under the restrictions imposed by the Hire Purchase and Credit Sale Agreements (Control) Order, water heaters sold during the 12 months ended last March fell to 26,465, compared with 55,044 in the previous year (the Order came into operation on February 1, 1952). In contrast, the hire purchase of cookers, which have never been subject either to purchase tax or hire purchase restrictions, rose from 477,313 to 495,400.

New Stock Issue

In August of this year the Gas Council made a new issue of £80 mill. British Gas 4% Guaranteed Stock, 1969-72, at a discount of £1%, bringing the total amount issued to date to £384,075,805, of which £189,075,805 is compensation stock. Apart from the compensation stock, £40 mill. British Gas 3% Guaranteed Stock, 1990-95, was

issued in May, 1945, and £75 British Gas 3½% Guaranteed Stock, 1969-71, was issued in July, 1951. Asked at the Press conference in October whether the Gas Council was likely to raise further new capital in the near future, Sir Harold Smith said the £80 mill. raised in August would last to the end of the year. It was being used largely to repay temporary loans. The Council would be borrowing again from the banks, but obviously it could not go on doing that indefinitely.

The only change in the membership of the Gas Council this year has been the appointment, as from January 1, of Mr. A. R. McBain (Chairman of the Southern Gas Board) in succession to Mr. O. R. Guard (who exchanged seats with Mr. McBain as a part-time member of the Southern Board). The Gas Council and area boards will complete their first five years early in 1954, and the appointments of full time members will come under review; so far there are no rumours of changes. On the expiry during the summer of the initial period of appointment of Alderman J. W. Moore as Chairman of the Southern Consultative Council (and ex officio member of the Southern Board) the Minister did not re-appoint him as he had attained the age of 70. Mr. F. C. Rea, of Portsmouth, was appointed in his place.

The Ridley Report

The Ridley Report, which had been published in September of last year, continued to receive consideration by all sections of the gas industry during the year. The Committee did not recommend the enforcement of any changes in the pattern of the fuels used for any purpose by any type of consumer; its emphasis was rather on the need for improved efficiency in the use of fuels. Among the measures recommended by the Committee for promoting greater efficiency in the use of fuel by industry were that there should be a substantial increase in the advisory service available and that the Minister should invite industry to set up an organisation for that purpose. The recently issued annual report of the Gas Council describes the advisory service which the gas industry offers to industrialists and cites improvements in the efficiency of gas and coke burning appliances which have resulted from co-operation between officers of the gas industry and manufacturers. The Gas Council agreed to join in the establishment of the National Fuel Advisory Service for Industry under the auspices of the British Productivity Council.

In the domestic field the Gas Council has produced, for use by the staffs of area boards and for local authorities, architects, builders, and coke distributors, a handbook of tested and approved coke burning appliances which fulfils the recommendation of the Ridley Committee that there should be a new and more informative list of domestic solid fuel appliances, with details of performance and cost. A similar service is provided for gas, and a list of tested and approved domestic appliances has been prepared for the Ministry of Housing and Local Government for issue to housing authorities. The Gas Council has also joined with the British Electricity Authority and the Coal Utilisation Council in the preparation of a brochure, as recommended by the Ridley Committee, designed to show householders how they may easily and cheaply improve the heat insulation of their houses.

The East Coast Floods

A review of the events of 1953 would not be complete without reference to the fact that five of the area boards suffered damage, but happily no loss of life, when in February the sea broke through the coastal defences of several parts of the east coast of England and Scotland, and also flooded the low-lying lands of the Thames Estuary. Seven manufacturing stations and 7,000 consumers in the area of the Eastern Gas Board were affected, and at Lowestoft and Harwich conditions were such that it became impossible to supply gas. Full supplies and pressure were restored within nine days of the floods. Coal gas plant at the North Thames Board's works at Southend was put out of action and for a time it was necessary to drop gas pressure, but the operation of the North Thames grid prevented a complete failure of supply. Considerable work was entailed at Mablethorpe and Sutton, in the area of the East Midlands Board, in clearing mains and service pipes which became blocked with sand and in renovating and replacing damaged gas appliances.

Several works and distribution systems of the South Eastern Board along the north Kent coast were flooded, as also was the Belvedere holder station, where holders and pumping plant play an important part in distributing gas to the north western part of Kent. There was considerable damage at Banff, but with second-hand plant made available at short notice by the Perth Group, a full supply of gas was restored within 10 days. Four of the men of the gas industry who helped to mitigate the disaster of the floods were honoured by the Queen.

Legal and Parliamentary

WHETHER or not the legal and Parliamentary business of the Gas Council and the 12 area boards will eventually involve less work than that of the 1,100 separate company and municipal undertakings which existed prior to 1949 still remains to be seen. The nationalised industry is now nearly five years old, and innumerable matters which were formerly the subject of countless private Acts and Orders are covered by the more comprehensive provisions of the Gas Act, 1948. There is, however, so much legal and Parliamentary work as to warrant 11 of the 12 area boards having a legal officer—whether by that or some other name—as one of its principal officials. If we were asked why not all 12 we could only quote Mr. A. R. McBain, Chairman of the Southern Gas Board, who, in addressing the Consultative Council on the annual report and accounts earlier this month, said: 'It has been possible to keep headquarters staff to a minimum, and when specialist advice has been required, outside assistance has been sought rather than engage full-time officials. As an example of this practice, the Board takes advantage of the services offered by local solicitors, and when necessary advice is taken from architects, land valuers, etc.'

In some cases the secretary or the assistant secretary of an area board is a qualified solicitor; in others the post of board solicitor is a separate appointment; the Wales Gas Board has gone even further and appointed two. All area officers in charge of legal affairs, together with the Legal Officer of the Gas Council, meet bi-monthly at the headquarters of one or other of the area boards to co-ordinate knowledge and experience in regard to: (a) Local matters which may affect the industry as a whole; (b) legislation calling for common action among the boards; and (c) legal matters arising from the work of the area boards which has a common interest to all the boards.

On the broader front the legal officers of the nationalised industries—gas, electricity, coal, transport, and so forth—meet periodically to discuss problems of common interest. These talks now include meetings with representatives of the British Broadcasting Corporation, British European Airways, British Overseas Airways Corporation, and the Iron and Steel Corporation. Many of the new developments that have arisen from nationalisation have produced problems which are best faced in collaboration with those who have had experience in other spheres.

Several but by no means all of the separate pre-vesting gas undertakings had their own staff pension schemes. In the past year staff pension schemes have been established, with the approval of the Ministry of Fuel and Power, under the provisions of the Gas (Pension Scheme) Regulations, 1949, as amended by the Gas (Pension Scheme) (Amendment) Regulations, 1950, by the Gas Council and by each of the area boards.

Members of existing schemes have the option of transferring to the new schemes on terms to be determined by

the Gas Council after consultation with the actuary. New entrants to the industry will, of course, come into the new schemes, but members of pre-vesting staffs may choose to remain in the older schemes. It is for the individual members to weigh the advantages of transfer against the disadvantages and to reach their own decisions; meanwhile a considerable amount of legal work has been involved.

All public and private Bills deposited in Parliament during the year which seemed likely to concern the Gas Council or any of the area boards were reviewed by the Legal Department of the Gas Council. In all cases where it appeared that the interests of the Gas Council or any of the boards might be affected it was possible to secure suitable protection by negotiation with the promotors. It was not necessary for any petition to be deposited.

Street Works

The Public Utilities Street Works Act, 1950, affects a number of public corporations and authorities, and as in the previous year, conferences with other bodies, including the Post Office, water authorities, and electricity boards have been held during the year to deal in particular with suggested codes of practice for the reinstatement of highways. Discussions with the various interests concerned have resulted in agreement with the Middlesex County Council on a form of code which it is hoped will provide a basis for any further local negotiations that may be necessary.

With the handing over of rating assessments to the Inland Revenue authorities the question of rating assessments for gas undertakings has again been under consideration, and the industry has been negotiating for a new system. The old system of assessing gas undertakings on what is known as the profit basis has become almost unworkable. Since the passing of the Local Government Act, 1948, electricity undertakings have not been rated, but the industry has paid a sum in lieu of rates based on a standard payment for the benefit of local authorities in England and Wales. The payment is subject to a sliding scale adjustment in respect of increases or decreases in consumption and variation of the average rate poundage. Transport undertakings have also got a similar system, and the application of such a method to the gas industry has been discussed.

Right of Entry

In our last annual review we referred at some length to the 'forcible entry' case in which the Eastern Gas Board had been involved, and which had given rise to much political discussion in and out of Parliament on citizens' rights in their own homes. In that particular case innumerable notices had been given and calls had been made before the entry was effected, and the High Court decision left no doubt as to the interpretation of the relative Section of the Gas Act. Early in December it was announced that a lady M.P. had been successful in the ballot for Private Members' Bills, and that she was to introduce a measure dealing with right of entry.

Many legal questions on a wide range of subjects have been referred to the Gas Council by the area boards, and where any matter raised by a board appeared to be of general interest, the advice given from Gas Industry House has been made available to the industry as a whole.

Transport Act

The Transport Act, 1953, which received the Royal Assent in May, required the British Transport Commission to dispose of its road haulage property, amended the law relating to the powers and duties of the Commission, and imposed a levy for the benefit of the Commission on motor vehicles used on roads. No express power was granted to the Gas Council to lodge objections or representations regarding schemes to be made by the Commission for re-organisation of its railway system. Such powers were specifically conferred on the National Coal Board, but representations could be made by the Gas Council only in cases where it could show that it was likely to be specially affected by a scheme. It was also urged that the sole requirement placed on the Transport Commission to prescribe maximum charges was an unwarranted departure from past practice, and that the protection to traders interested in heavy traffic, notwithstanding their right to appeal to the Transport Tribunal, was inadequate. A third objection was that the transport levy should not be imposed on the vehicles of public utilities, particularly on those engaged in highway work. Representations by the Gas Council on the first point were not accepted by the Government. It was decided that representations on the second point should not be made, and on the third, although the Government agreed to increase the weight of vehicles to be exempted from the levy from 20 to 30 cwt. the concession will give little if any relief to the industry.

Fireguards, Pensions

The Heating Appliances (Fireguards) Act, came into operation in the autumn, and by Regulations made by the Secretary of State it became illegal to sell or hire appliances unless they are fitted with an adequate fireguard. Incidentally it might be mentioned that while purchase tax it not payable on a fireguard unattached, it is payable if the guard is atached to a fire, and as the law in certain circumstances requires the guard to be attached it seems that there is a good case for a revision of purchase tax requirements. Before the Act was passed, the Gas Council had been consulted regarding the Regulations.

The passing of the Pensions (Increase) Act led to claims on behalf of pensioners of gas boards (who would otherwise be covered by the Act) where obligations had vested in those boards from the gas departments of local authorities. The concession of the claim involved discussions as to the appropriate form of authorisation, and it was eventually decided that suitable amendments should be made in the Gas (Protected Persons) Schemes. Pending the consent of the Minister to the amendments submitted it was agreed that the increases should be paid and the approval of the Minister to this course was obtained.

Effluent Disposal

Disposal of gasworks effluents has been one of the most difficult problems of the gas industry for many years and with the erection of large new works on sites further removed from centres of population it has not become less difficult in more recent times. The smaller authorities in whose areas these new works are situated are not always in the fortunate position of having sewerage systems capable of taking the additional effluent, and there has been discussion as to the possibility of Government financial aid to meet the situation. In July the Minister of Housing and Local Government gave his consent to the discharge of spent gas liquor from the Portwood gasworks of the North Western Gas Board into the public sewers of the Stockport Corporation. The consent was subject to conditions issued by the Minister in October, limiting the free ammonia content to 600 parts per million and the oxygen absorption from acid potassium permanganate in four hours at 26.7°C. to 12,000 parts per million. The maximum daily discharge was fixed at 19,200 gal. during the summer months and 24,000 in the winter months, and the Minister's determination required the Gas Board to pay to the Corporation a charge calculated at 4s. per 1,000 gal. of gas liquor discharged for its reception into the sewers and accommodation and treatment at the sewage disposal works.

More recently it was announced that the Minister had allowed the appeal of the North Western Gas Board against the refusal of the Lakes Urban Council to allow it to discharge 320,000 gal. of effluent from the Ambleside gasworks into the public sewers. At the public enquiry it was stated that the Board wished to discharge the liquor at the rate of 2,250 gal. a day, but the Ministry suggested that the Council and the Board should meet to discuss 'some degree of flexibility in this arrangement.'

Only two further Statutory Instruments have been issued during the year, namely:

No. 239 The Gas (Undertakings of Area Boards) (Transfer Order, 1953.

No. 1525 The Gas (Pension) (Amendment) Regulations, 1953.

Those who are interested in keeping a complete list of the Orders and Regulations issued to date under the Gas

Act, 1948, may like to note that earlier lists have been published in our Annual Review Numbers as follows: December 27, 1950 (p. 671); December 26, 1951 (p. 792); and December 31, 1952 (p. 775).

Litigation in 1953

A number of law suits were reported during the year. In the case of Coote *v.* Eastern Gas Board the plaintiff claimed that the board, as successor to the Luton Gas Company, was liable in respect of the failure of the company to provide adequate ventilation in the retort houses of the company in breach of Section 4 (1) and Section 47 (1) of the Factories Act, 1937. Under Section 14 (2) of the Gas Act, the liability of area boards in actions is limited to three years. It was held that this limitation of liability applies only in respect of acts of the board performed in its own name and does not apply to obligations vesting in the board on nationalisation. The liability of the board in respect of obligation vesting from the Luton Gas Company was six years in accordance with Section 2 of the Limitation Act, 1939. The action of the plaintiff against the board was therefore not statute barred. As, however, there had been no breach of the Factories Act, 1937, the board was not liable.

In the case of the East Midlands Gas Board *v.* Doncaster Corporation it was stated that the corporation, after February 10, 1948, debited two amounts in the accounts of its gas undertaking and credited these amounts to the general rate fund and to the revenue account of the water undertaking of the corporation. The board contended that both transfers were contrary to Section 37 (1) of the Gas Act, and claimed the amounts within the time specified by the Section. The matter, in the absence of agreement, was referred to the Ministry of Health, which made a determination in favour of the gas board. It was held that the determination having been made by the Minister the court had no jurisdiction. Alternatively although the separate accounts of the gas undertaking might be part of the general rate fund, Section 37 of the Gas Act was applicable to the debit in the gas account and credit in the general fund account.

It is interesting to compare this decision with the judgment in the British Electricity Authority *v.* Exeter Corporation in January. The Electricity Act, 1947, contains no provision comparable with Section 37 of the Gas Act. It was held, however, that in the true construction of the Exeter Corporation Act, 1935, an amount transferred to the general rate fund from the electricity department must be paid to the British Electricity Authority.

Industrial Relations

NEGOTIATING machinery in the gas industry is not greatly different from what it was before vesting day when the Gas Council and the area boards succeeded not only to a form but to a tradition of harmonious settlement which gave a promising start to the new régime. The present machinery stems from a clause in the Gas Act under which a number of constitutions and agreements have been negotiated at national level, with corresponding area constitutions and agreements. There has been a broadening not only of the machinery of negotiation but also of the measures taken to enlarge the interest of employees in the services in which they are engaged as well as to improve their working conditions. During the year progress in particular has been made in providing means of consultation at all levels, and in increasing educational and training facilities offered to employees of all grades.

There are over 50 separate unions with which negotiation can take place in the industry, but the major joint negotiating bodies on a national level are fewer in number, and the 50-odd bodies are represented on one or more of them and their counterparts at one area level or another. The major negotiating bodies are the Senior Gas Officers' Joint Council; National Joint Council for Gas Staffs; National Joint Industrial Council; National Joint Standing Committee for Intermediate Grades; Confederation of Shipbuilding and Engineering Unions (with its 39 constituent members); and the Amalgamated Union of Building Trade Workers. The clause under which the machinery works refers to settlement by negotiation of terms and conditions of employment of persons employed by area boards and the Gas Council, 'with provision for reference to arbitration in default of such settlement in such cases as may be determined by or under the agreements.'

Manpower Problems

Manpower problems in varying forms and of varying degree confronted the area boards in their initial years and they had to take whatever measures they could to see that their personnel became more adequate for the duties confronting them. Deficiency in manpower was more pronounced in the Midlands than in the South, and it was also in the Midlands that the competition for labour was greater. Conditions generally have become easier and for the first time since vesting day labour shortages, except among certain technical trades and among skilled craftsmen, have ceased to be one of the major obstacles to the development of the plans of the East and West Midlands Boards. The number of persons employed in the industry at the end of March was 147,641, compared with 147,937 a year earlier. Commenting on these figures, the Gas Council's annual report said 'the progress which the boards have made towards integration and the concentration of production in more economic units is being proved by the results.' Closing of plants has meant displacement of labour in some instances, and the boards have done their utmost to avoid hardship for any employee concerned.

The estimated annual cost of increases in salaries and wages which took effect during the year ended last March under agreements reached in accordance with the negotiating machinery of the industry, including adjustments consequent upon the reclassification of gas fitters, is £2,940,000. Of that total, the amount borne during the financial year was £1,377,000. An agreement for a cost-of-living award to senior gas officers which was dated back to January 1 was concluded later in the year. Agreements with regard to sick pay for staff and overtime rates for shift workers were concluded, and agreement was also reached on overtime rates payable to shift workers performing extended turns of duty during the absence of one of their number on annual holiday or during similar absences.

Joint Consultation

Area joint councils, both for staff and manual workers, formed with the object, among other purposes, of implementing at area level, decisions and agreements made by the National Joint Councils, have worked smoothly and it has been necessary to refer only a few cases to the national joint conciliation panels. Joint consultative committees—new in some parts of the country though not to the industry generally—proved of value as an element in the creation of understanding and mutual confidence between boards and their employees. Committees have shown that they are ready to proceed beyond the discussion of questions of personal welfare to suggestions for increasing efficiency in the operations of the boards.

Medical services, welfare, and safety have received increased attention. Some boards have full-time medical officers, and while full-time appointments may not be appropriate in every area, other boards are considering supplementing their part-time by a full-time service. To obviate the need for a number of consulting rooms throughout the area, the North Western Board has introduced a mobile consulting room. More attention is being given to accident prevention, and more employees are being trained in first aid. When new works or major extensions to existing works are being planned, opportunity is being taken to incorporate welfare facilities of modern design.

Provision for the education and training of all grades of employees has advanced. The general programme of

training prepared by the Gas Council with the help of its Advisory Committee on Education and Training and approved by the Minister has formed the pattern on which the boards have implemented their own schemes, though they have adapted it to suit their own circumstances. Over 5,000 employees are being released for day-time attendance at courses, some 4,500 are attending evening classes, and a smaller number are receiving financial help for correspondence courses. In all not far short of 10,000 employees of the industry are following some set course of study. The boards work in close association with local education authorities, from whom they receive great help, and, in matters of technical training, with the district education committees of the Institution.

Advantage has again been taken of the facilities offered by the Administrative Staff College at Henley and, as mentioned in our review of the Institution of Gas Engineers on another page, the Gas Council and the Institution co-operated in arranging for an experimental residential course in management and general subjects at Brooklands County Technical College, Weybridge. The Gas Council is considering the establishment of a permanent centre at which residential training can be given in management as well as in technical subjects.

Arrangements were again made for university students to learn something of the industry's technical and administrative activities. For instance, in Wales during this summer's vacation 39 students were employed for varying periods, compared with 35 in 1952, on accountancy, clerical, distribution, drawing office, industrial relations, laboratory, legal, meter collecting, statistical, and works assistance duties. Reports recorded satisfaction on both sides, and the Wales Gas Board expressed the view that there should be continuation of the scheme.

THE YEAR'S OBITUARY

DEATH has removed during the year some of the best known men in the gas industry, many still in the active ranks as well as those who had retired. We recall particularly Mr. Daniel M. Henshaw, Chairman and Joint Managing Director of W. C. Holmes & Co., Ltd., who died in London, after an operation, in February, at the age of 69. It was only last year that we recorded with satisfaction that the distinction of Honorary Membership of the Institution of Gas Engineers had been conferred on him in recognition of his outstanding services.

He served on the Council of the Society of British Gas Industries, of which he was Chairman, in 1935, and was for 20 years a member of the Livesey Committee of Leeds University, representing the Institution. Mr. Henshaw was a member of the Gas Gallery Committee of the Institution which he founded in company with the late Mr. Thomas Hardie, whom he succeeded as Chairman for a short time after the war, but resigned due to ill health in favour of Mr. F. M. Birks.

* * *

A month later we recorded the death at the age of 54 of Mr. Harold E. Bennet, Chairman of Alder & Mackay, Ltd., and a Director of United Gas Industries, Ltd., of which companies there had recently been an amalgamation of interests. Following the death of his father, Mr. Bennet was elected to the board of Alder & Mackay, Ltd., in 1919, and three years later he became London Managing Director. He was appointed Chairman last year. A member of the Institution of Gas Engineers, Mr. Bennet was Chairman of the Society of British Gas Industries in 1933, in which capacity he was one of the delegates joining in the visit of the Institution to Canada and the United States that year.

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Among those still active on the gas supply side who died during the year was Mr. R. W. Wood, Manager of the Commercial District of the North Thames Gas Board, who died in January, aged 61. Joining the old Commercial Company in 1907 he became accountant in 1940 and had been appointed joint secretary shortly before nationalisation, when he became District Manager. Dr. F. G. Holman, Chief Medical Officer of the North Thames Board, died in October, aged 44, having entered the service of the Gas Light and Coke Company in 1946. Mr. H. J. Ashwood, Mechanical Engineer to the Wales Gas Board at Cardiff, who died in March, entered the gas industry from Ruston & Hornsby, Ltd., in 1936, serving until nationalisation as a maintenance engineer with the Severn Valley Gas Corporation and Gas Consolidation, Ltd. Mr. Walter A. Barnett, Kent County Divisional Distributing Engineer, South Eastern Gas Board, who died on December 4, aged 62, started his career under Dr. Charles Carpenter at the South Metropolitan Gas Company, and after experience at Nine Elms and at Barnet he took over the post of Engineer and Manager at Snodland where, early in 1941, an enemy land mine intended for the River Medway fell on the works and laid them in ruins. For his outstanding work in restoring the gas supply within a few days of the incident he was awarded the M.B.E.

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Widely known and esteemed in gas salesmanship circles, Mr. A. J. Privett, Sales Manager of the Portsmouth, Gosport, and Bognor Regis undertaking of the Southern Gas Board, died in hospital in August after a sudden illness at the age of 61, after 40 years devoted service. He was described by his Divisional General Manager as 'a complete master of his job who delighted in giving his best to the industry.' In May, Mr. A. Pillans, Manager of the St. Anthony's by-product works of the Northern Gas Board, died at the early age of 42. He joined the staff in 1946 as senior chemist, and on the retirement of Mr. S. A. Wikner in 1949 succeeded to the Managership of the works. He was engaged in substantial plant extensions at the time of his death. Another loss to the Northern Board was the death in January at the age of 56 of Mr. H. Baines, Commercial Assistant to the Middlesbrough Divisional General Manager.

* * *

Many links with the past were broken by the death of those who had retired from active work in the industry. Just as our last annual review number was going to press we received news of the death of Mr. W. Hawkyard, former General Manager of the Tottenham Division, less than two years after retirement. He was one of the many victims of the fog which caused so many casualties last winter. Starting in 1904 at the Bradford Road works, Manchester, Mr. Hawkyard served the industry for 47 years, spending about half of that time at Tottenham. He was appointed Deputy Engineer in 1945 and a year later became Chief Engineer. Mr. W. S. Morland, who died in November aged 90, was for many years Engineer of the Gloucester Gaslight Company. His retirement in 1949 from the Chairmanship of the Cinderford Gas Company ended a direct family connection with the gas industry extending over 100 years. He was the uncle of Mr. W. Morland Fox, Director of W. J. Jenkins & Co., Ltd.

* * *

One of the best known personalities in the industry prior to his retirement to Winchcombe, near Cheltenham, in 1945, Mr. Ralph Halkett, formerly of the Sheffield Gas Company, died on October 17. He began his gas career with the Bournemouth Gas and Water Company, and after some years in the Leeds Gas Department he went to Glasgow in 1912 as Commercial Superintendent of the municipal gas undertaking; five years later he became Assistant General Manager. Mr. Halkett was appointed General Manager at Sheffield in 1919, General Manager and Secretary in 1924, and a Director in 1940 with the designation of Director and

General Manager. His son, Mr. Ralph Halkett, junior, already Assistant General Manager, undertook the added duties of Secretary, and when the father retired in 1945 the son became general manager, but he left the industry when it was nationalised. The Sheffield undertaking under Mr. Halkett's management, rose from sixth to second largest undertaking in Britain. His outstanding contribution to the industry was the development of the Sheffield grid. The company absorbed 11 other undertakings and its area extended from Barnsley to Matlock, all the undertakings being connected by high or low pressure mains with Sheffield.

* * *

Only a year ago we recalled in our annual review the death during 1952 of Mr. George Helps, of Nuneaton. His son, Mr. George Helps, junior, joined the Nuneaton undertaking in 1911 and succeeded his father as Engineer and Manager on his retirement in 1946. He, in turn, retired from what had now become the Nuneaton District of the West Midlands Gas Board at the end of last year, and he died suddenly at the age of 67 on April 23, less than nine months after his father, an outstanding character of the past generation of gas engineers. In November the death occurred of Mr. J. S. Thorman, a former Deputy Chief Engineer of the Gas Light and Coke Company. Entering the service of the old West Ham Gas Company in 1896 as a pupil of his father, then Engineer there, he became deputy resident engineer at Beckton in 1918, and after periods at Bow Common and Stratford he went to Southall, the largest of the late Brentford Gas Company's manufacturing stations, on the amalgamation of the two companies. For some years he was Chairman and Chief Examiner in Gas Engineering of the Institution of Gas Engineers Education Scheme. From Southall Mr. Thorman was transferred as station engineer to Fulham, where he remained until his appointment as Deputy Chief Engineer in 1941; he retired in 1945.

* * *

Mr. F. G. Shaw, who retired in 1944 from the position of Engineer and Manager of the Buxton Gas Department after holding the appointment for 33 years, died at Blackburn after a short illness on November 14 at the age of 69. A past President of the old Manchester Association of Gas Engineers, Mr. Shaw took an active part in the various organisations of the industry before nationalisation. We knew him the more intimately because he was associated with the late Mr. Rupert King, then Editor of the 'Gas Journal,' in raising the 'Shewring Fund' for the benefit of the widow of a former Cambridge Engineer and Manager who gave his life in a gallant attempt to rescue a friend overboard from a yacht in the Channel. Another link with the past was severed by the death in November of Mr. G. J. Clark, who retired in 1932 after more than 40 years with the Gas Light and Coke Company, being at the time of his retirement Manager of the Research and Training Section at Watson House. He was a founder member and an early President of the London and Southern Junior Gas Association, of which his son, Mr. L. J. Clark, was President in 1948. Mr. J. W. Napier, O.B.E., who retired in 1942 after 40 years' service to the Alloa Corporation as Gas Engineer and Manager, died in December. His career was one of remarkable activity. He was President of the Waverley Association of Gas Managers in 1912, and of the North British Association in 1929, and his latter year of office was memorable for his vigorous advocacy of a change of name to the 'Institution of Gas Engineers of Scotland.' Twenty-two years later the Waverley and North British Associations amalgamated under the present title of the Scottish Association of Gas Managers. Mr. Napier originated the Scottish Gas Council—a forerunner of the National Gas Council—and held the position of Secretary of the Scottish Management Committee of the N.G.C. and of the Federation of Gas Employers, being also Secretary of the Scottish Tar Board and Hon. Secretary of the British Commercial Gas Association (Scotland).

Other deaths among retired gas officials during the year were those of Mr. R. H. G. Barnard, for 26 years Manager at Wantage; Mr. J. H. Ranft, who retired from the post of District Service Manager at Lytham St. Annes in 1952 after 40 years in the industry; Mr. G. W. Ellis, Director of the former Berkhamsted Gas Company and father of the present District Engineer and Manager there; Mr. H. Hopkinson, formerly Secretary of the Chester United Gas Company; Mr. S. H. Hunter, Assistant Fittings Superintendent to the former Sheffield Gas Company; Mr. A. S. Campbell, Secretary and Director of the Wellingborough Gas Light Company; Mr. J. Kirk, Engineer and Manager at Auchterarder; Mr. J. Young, late Engineer of the Petone and Lower Hutt Gas Board; Mr. H. J. Smith, Distribution Superintendent of the Shotley Bridge Gas Company, who had spent 49 years in the industry; Mr. S. Maddocks, who prior to the war had attended every meeting of the Commercial Gas Company for 50 years; Mr. Burt Long, for 32 years with the Horley Gas Company; Mr. C. B. Newton, aged 93, formerly Gas and Water Engineer at Carlisle; and Mr. W. McMichael, Chairman of the Oundle Gas Company.

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Mr. John King, Chairman of John King & Sons (Enamellers), Ltd., died in February, aged 54. Mr. James Miller Thomson, formerly Chairman of Alder & Mackay, Ltd., died at his Edinburgh home in August at the age of 83; and Mr. A. Hamilton, Chairman of Archd. H. Hamilton & Co., Ltd., paint manufacturers, died in November, aged 65. Two losses sustained by Smith Meters, Ltd., were those of Mr. H. Barlow, a Director, in July, and of Mr. A. T. Wallington, Secretary of the Company, in August. Mr. J. Sidney Wilson, Managing Director of Thomas Glover & Co., Ltd., and a Director of Glover & Main, Ltd., died suddenly on December 15 at the age of 67. Mr. Wilson joined Thomas Glover & Co., Ltd., as an apprentice in the engineering shop in 1901, and in 1907 he was appointed to assist the foreman of the automatic machine shop, subsequently becoming foreman. In 1920 he was appointed to assist the works manager, and subsequently he was promoted manager of the whole meter works. In 1941 Mr. Wilson was appointed General Manager of Thomas Glover & Co., Ltd., and in 1950 he was elected to the Board, later becoming Managing Director. He was appointed a Director of Glover & Main, Ltd., in 1952.

* * *

Mr. C. Blakey, Commercial Manager of Radiation Group Sales, Ltd. (Solid Fuel Division), since its formation in 1950, died in April, aged 56. Works Manager of the main factory of George Kent, Ltd., for many years, Mr. R. W. Bedford died in October. Mr. H. W. Barnes, London Director and Manager of the Oxley Engineering Co., Ltd., died as a result of a motor accident in August. Two representatives of Parkinsons—one on the stove side and one on the meters—who had a wealth of friends in the gas industry, died during the year. The first was Mr. J. S. Burgoyne, who died in July, aged 66. He was engaged, in the main, in Southern England and Wales, and was a member and very regular attender at the meetings of the Wales and Monmouthshire and the Eastern Sections of the Institution of Gas Engineers. Then, at the same age, in November, came news of the death of Mr. T. B. Armitage, who had seen service on the distribution side at Aldershot, Swansea, and Cheltenham (where he was Distribution Engineer) before joining the Parkinson Stove Co., Ltd., in 1932. He was inaugural President of the Wales and Monmouthshire Juniors in 1922 and President of the Western Juniors in 1928.

* * *

Many of the older members of the industry learnt with regret of the death in September of Mr. W. M. Mason, first Secretary and later Manager, of the British Commercial Gas Association, in his 83rd year. He was the ideal man for his job and it was a sorry day for the B.C.G.A. when ill health caused his retirement in 1932.

Personalities of 1953

THE personnel of the gas industry has not changed a great deal during 1953, but there have been rather more retirements than usual among chief officials who have been well known in the industry. The only change in membership of the Gas Council was one announced late in 1952 which took effect from January 1—the appointment of Mr. A. R. McBain (Chairman of the Southern Gas Board) in succession to Mr. O. R. Guard, with whom he exchanged seats as a part time member of the Southern Board.

There was gratification throughout the industry when, in the New Year Honours, Colonel Harold C. Smith received the distinction of Ordinary Knight Commander of the Civil Division of the Order of the British Empire. Sir Harold thus received 12 months after

Mr. S. A. King, Commercial Manager of the Eastern Gas Board. From vesting day until the middle of this year he was Sales and Service Manager of the Board's Tottenham Division.

his appointment as Chairman of the Gas Council a similar honour to that conferred on Sir Edgar Sylvester, the first Chairman, in the Birthday Honours of 1949, a few weeks after vesting date.

Other names in the New Year Honours list were Lord Limerick, Chairman of Ascot Gas Water Heaters, Ltd. (created G.B.E.); Lieut.-Col. F. J. Bywater, a former President of the Southern Association of Gas Engineers and Managers (C.B.E.); Alderman J. W. Moore, Chairman of the Southern Gas Consultative Council until he retired on reaching the age limit (C.B.E.); Mr. H. Johnston, Chief Engineer North Eastern Gas Board (O.B.E.); and Mr. H. Atlee Hunt, Trowbridge and Bradford Distribution Superintendent, Mr. T. D. Olver, production Engineer, Manchester, and Mr. C. T. Price, East Surrey Divisional Engineer (M.B.E.).

Coronation and Birthday Honours announced in June included the C.B.E. for Mr. J. R. W. Alexander, Executive Chairman, Gas Officers Guild; Miss K. M. Halpin, President of the Women's Gas Federation; and Mr. M. Milne-Watson, Chairman, North Thames Gas Board; the O.B.E. for Mr. J. E. Davis, Chief Technical Officer, South Eastern Gas Board; and Mr. S. P. Pepin, Managing Director and General Manager, Jersey Gas Light Company; and the M.B.E. for Mr. W. W. Hopkinson, Station Engineer, Dartford and Belvedere; Mr. R. Kerr, Deputy Accountant, North Western Gas Board; and Mr. C. M. Plowman, Adviser to the Gas Council Industrial Relations Committee. Both lists included a number of British Empire Medals, the Birthday List comprising several in recognition of services during the East Coast floods.

Most members of area boards whose initial term of office expired were reappointed by the Minister of Fuel and Power, but there were also some new appointments, including Sir Arthur Smout (West Midlands), Mr. E. N. Duffield (North Eastern), the Hon. D. E. Hely-Hutchinson (South Western), Alderman Huw T. Edwards (Wales), and Mr. J. G. Morgan (Northern). Mr. Morgan's appointment was of interest because he is a senior district official of the N.U.G.M.W., and a member of the National Joint Industrial Council for the Gas Industry. Mr. T. Mervyn Jones, Chairman of the Wales Board, added to his many activities by becoming one of eight members of the Welsh National Broadcasting Council under the B.B.C.

Lord Leathers retired from the post of Secretary of State for the Co-ordination of Transport, Fuel and Power in September after having served for nearly two years. Accepting his resignation and thanking him for his services, Sir Winston Churchill wrote to Lord Leathers: 'Now that we are in smoother waters we can rely on the normal methods of Cabinet procedure to secure co-ordination between the departments which have been under your general charge.'

Mr. E. G. Stewart, Group Engineer controlling the North Thames stations at Brentford, Fulham, Kensal Green, Mill Hill, Southall, and Hornsey, retired after 44 years service with the Board and its predecessor, the Gas Light and Coke Company. His long and distinguished career included several years as Chairman of the Gasworks Safety Rules Committee of the Institution of Gas Engineers. In retirement he is continuing with the preparation of exhibits for the Gas Gallery at the Science Museum at Kensington. Mr. C. M. D. Belton, General Manager of the Shropshire Division, retired after 50 years in the industry, of which 44 were spent with the old Shrewsbury Gas Light Company and latterly the Shropshire Division His retirement breaks a link with one of the oldest gas families, for grandfather, father, uncle, brother, and nephew have also been identified with the industry.

CORONATION AND BIRTHDAY HONOURS

Dr. Harold Hartley, C.B.E., Chairman of Radiation Ltd., and a Past President of the Institution of Gas Engineers, was awarded the Melchett Medal of the Institute of Fuel.

Mr. A. B. Britton, Engineer and Manager at Hinckley, who retired after 43 years in the industry, had been at Hinckley over 20 years. He was one of those who took a very active part in the pre-nationalisation organisations of the gas industry and he is a past President of the Midland Association of Gas Engineers and Managers. His work in connection with effluent disposal problems is widely known throughout the industry. He was for many years a member of the Liquor Effluents and Ammonia Committee of the Institution and in 1949 he was appointed Chairman of his Board's Liquor Effluents Advisory Panel.

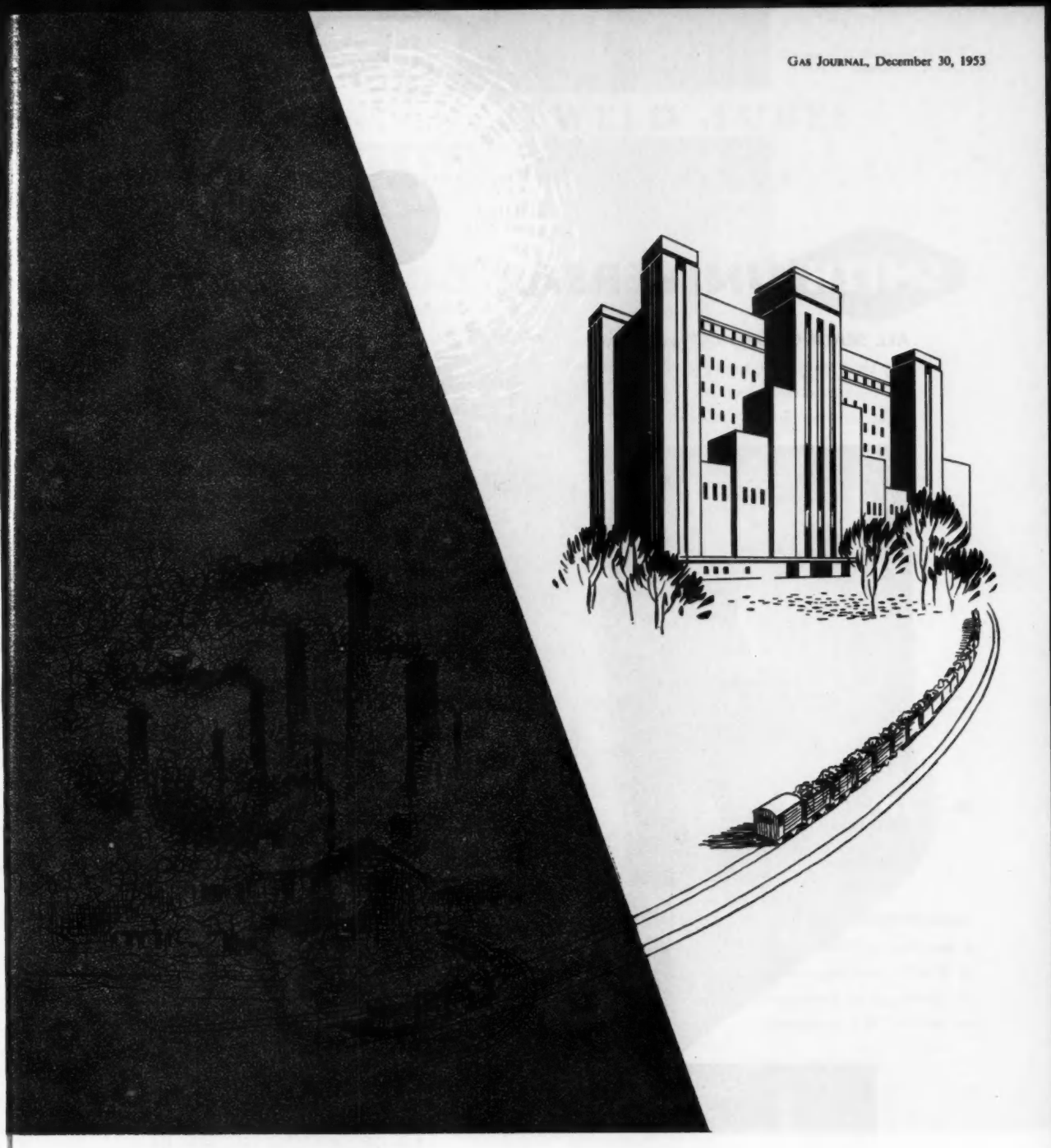
Retiring from the post of Engineer and Manager at Cradley Heath after 34

J. R. W. Alexander, C.B.E.

Miss K. M. Halpin, C.B.E.

M. Milne-Watson C.B.E.

Mr. J. E. Davis, O.B.E.



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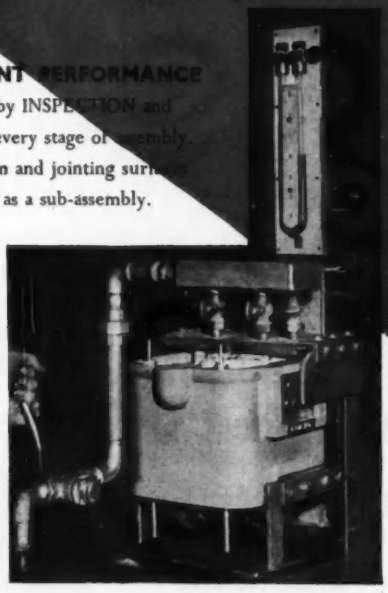

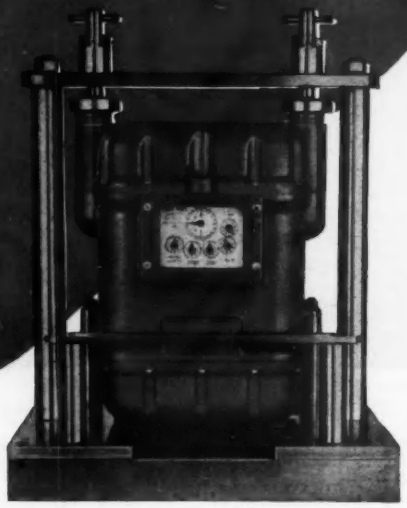

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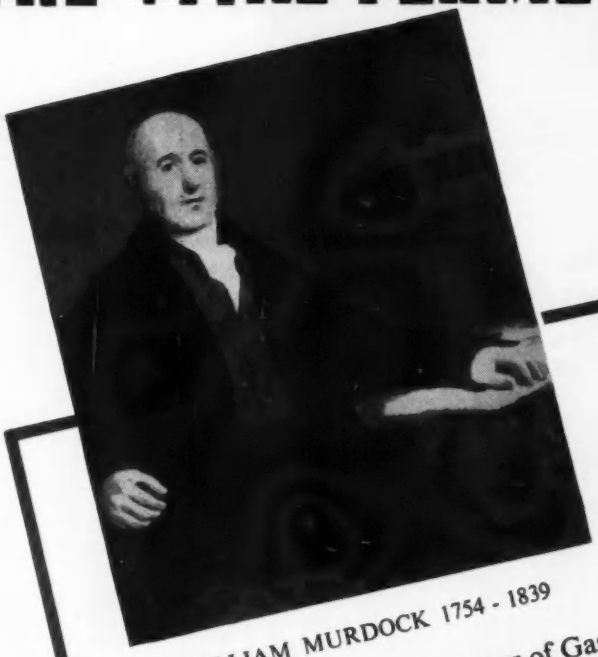

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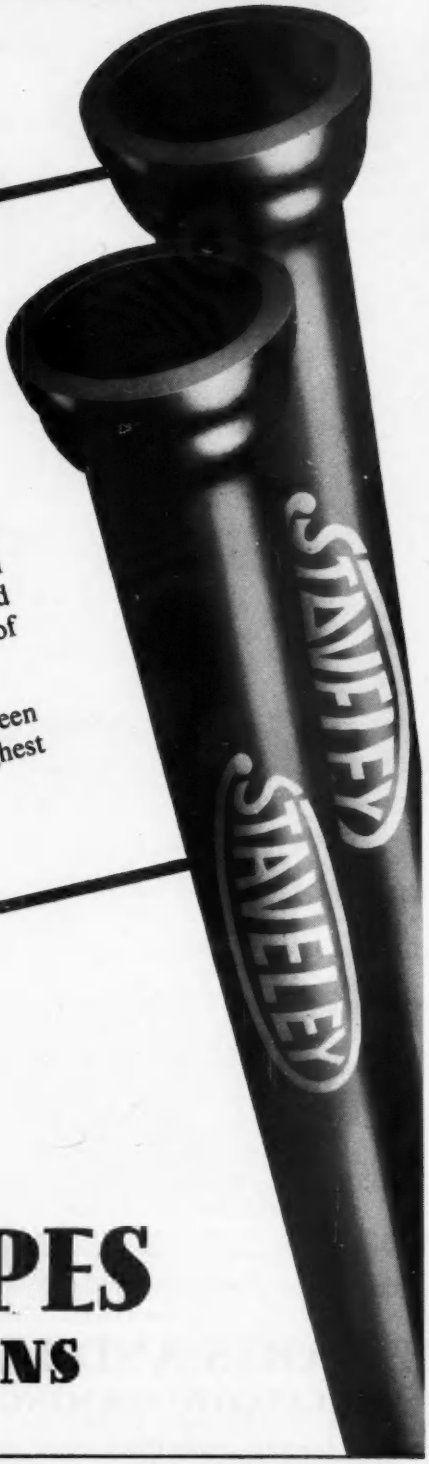

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Continued from p. 856— Personalities of 1953

years of service Mr. C. F. Dakin broke a family association of 76 years, his father having held the position before him for 51 years. Another notable West Midlands retirement was that of Mr. F. A. C. Pykett, Warwickshire Divisional Distribution Engineer, who before nationalisation was responsible at Coventry for distribution, mains, services, industrial supplies, maintenance, public lighting, showrooms, sales, and publicity. After 50 years in the industry Mr. E. Allison retired from the post of Chief Engineer at Portsmouth, Gosport, and Bognor Regis, and Mr. H. M. Lawrence, formerly General Manager, became Engineer and General Manager.

Mr. O. Pacey retired from the Local Managership of the Retford undertaking and was succeeded by Mr. R. Wright, of Worksop. Mr. L. G. Payne, Engineer and General Manager of the Isle of Wight undertaking, retired after 43 years, and Mr. R. G. Luxon gave up the post of Engineer, Manager, and Secretary of the Guernsey Gas Light Company after being in charge for 26 years. He remains a Director, and Mr. S. G. Vane suceeds him as Engineer, Manager, and Secretary. Two notable overseas retirements were those of Mr. J. Harrison, Deputy President and Secretary of the National Gas Association of Australia, and Mr. G. W. Allen, Editor of the *Canadian Gas Journal*.

The retirement of chief officials of two of the largest undertakings in Wales resulted in notable changes. Mr. Frank Boardman, Engineer and Manager at Cardiff, retired after nearly 40 years' service, and he was succeeded by Mr. J. Powdrill, General Manager and Engineer at Pontypool, the Secretary and a past Chairman of the Wales and Monmouthshire Section of the Institution of Gas Engineers. In turn Mr. Powdrill's place at Pontypool was taken by Mr. A. Facer, formerly Derby Sub-Divisional Manager. The retirement was also announced, to take effect from the end of this year, of Mr. E. Ablett, General Manager at Swansea, who has a long and notable record. His successor is Mr. A. Pickard, Engineer, Manager and Secretary of the Llanelly and Gowerton undertakings, and he in turn is to be followed at Llanelly later in 1954 by Mr. Darrell W. Rees, Engineer and Manager at Pembroke who, as the Coronation year Mayor of that ancient borough, had the distinction of a special seat in Westminster Abbey for the Coronation. At the conclusion of his term of office as Mayor of Pembroke Mr. Rees will succeed Mr. A. Pickard at Llanelly.

Left: *Mr. John Powdrill, M.B.E., Secretary and Past Chairman of the Wales and Monmouthshire Section of the Institution of Gas Engineers, who became General Manager and Engineer at Cardiff, following the retirement of Mr. F. Boardman.* Right: *Mr. A. Facer, formerly Derby Sub-Divisional Manager, East Midlands, succeeded Mr. Powdrill as General Manager and Engineer at Pontypool.*

Mr. Stanley Bennet, Managing Director of Alder & Mackay, Ltd., was nominated for the important post of Master of the Company of Merchants of Edinburgh. Dr. G. E. Foxwell and Dr. R. Lessing were members of the committee appointed by the Minister of Housing and Local Government, the Secretary of State for Scotland, and the Minister of Fuel and Power, to investigate air pollution problems, under the chairmanship of Sir Hugh Beaver.

Mr. W. D. King was appointed Deputy Chairman and Technical Director of Radiation Ltd., of which he was already a Director, and was succeeded as Managing Director of Richmonds Gas Stove Co., Ltd., by Mr. H. Sherburn. Mr. F. Brian Holmes was elected Chairman of B. H. D. Engineers, Ltd., in succession to the late Mr. D. M. Henshaw, and also Chairman of British Furnaces, Ltd., while Major D. Abel Smith followed Mr. Henshaw as Chairman of the Bryan Donkin Co., Ltd. Mr. Abel Smith's father, Mr. E. Abel Smith, had been Chairman for 10 years up to his death in 1938.

Mr. Roy F. Hayman, Industrial Gas Development Officer of the North Thames Gas Board, Watson House, was appointed Industrial Gas Development Officer to the Gas Council, the first occupant of an office to which the Council attaches great importance.

Mr. Sydney Smith, East Midlands, the first Area Board Chairman to announce a reduction in price of gas applicable to the whole of an area, though not to the whole of the consumers, the benefit being restricted to more than 31 therms a quarter.

Dr. G. E. Foxwell, Immediate Past President of the Institute of Fuel, who was a member of the Committee appointed in July under the Chairmanship of Sir Hugh Beaver to examine and report on air pollution. The Committee has issued an interim report.

Mr. A. Pickard, Engineer, Manager, and Secretary of the Llanelly and Gowerton undertakings, Wales Gas Board, was appointed General Manager of the Swansea undertaking, to succeed Mr. A. E. Ablett, whose retirement takes effect from December 31.

Left: *Mr. L. F. Randall, a member of the gas industry team which visited the United States in 1952, was appointed Deputy Commercial Manager of the South Eastern Gas Board.* Right: *Mr. J. E. Law was appointed Commercial Manager of the Tottenham Division in place of Mr. S. A. King, promoted to Area Commercial Manager, Eastern Gas Board.*

Dr. H. Hollings, who in 1952 relinquished his appointment as Director of the London Research Station of the Gas Council and Controller of Research, North Thames Gas Board, entered into a consulting agreement with Whessoe, Ltd., under which he will advise the company on all matters pertaining to gas purification and processes ancillary thereto, including by-product recovery.

Mr. K. L. Mortimore, Manager of the Hornsey District of the North Thames Gas Board, retired after an association of 28 years with the undertaking, having joined the old Hornsey Company in 1925 and became General Manager and Secretary in 1932.

Dr. Harold Hartley, Chairman of Radiation Ltd., was awarded the Melchett Medal of the Institute of Fuel, and

THE INSTITUTION OF GAS ENGINEERS

Under Royal Patronage

THE granting of her Royal Patronage to the Institution of Gas Engineers by the Queen in February, 1953, was a most significant and pleasing feature of this Coronation Year, which was also a year of solid progress in all the Institution's activities. The encouragement afforded by Her Majesty, following so soon upon the acceptance by the Duke of Edinburgh of Honorary Life Membership of the Institution, is deeply appreciated by all members, and the interest thus displayed by the Royal Family in the professional, technical, and educational functions of the Institution, which by its Royal Charter it is expressly charged to perform, is a source of inspiration for which the Institution is naturally grateful.

The membership of the Institution has increased during the year from 3,200 to 3,318. It is with regret that the Institution reports the loss through death of 16 of its members, including an Honorary Member, Mr. D. M. Henshaw, whose generosity to and interest in the Benevolent Fund and the Institution's educational activities is recalled with gratitude.

Active co-operation with fellow member associations of the International Gas Union has been maintained during the year and the Institution has been represented, by the President or another officer, at the annual general meetings of several of the overseas gas associations.

President at the Abbey

An illuminated address was sent, on May 13, in the name of all members of the Institution to the Secretary of State for Home Affairs for submission to the Queen on the occasion of her Coronation. The Institution was represented at the Coronation ceremony in Westminster Abbey by its President, Mr. J. T. Haynes.

The Institution's seven District Sections, the affiliated Irish Gas Association and Scottish Association of Gas Engineers and Managers and the Junior Gas Associations which are also affiliated to the Institution through the British Junior Gas Associations' Joint Council, have all had a very active and successful year. Some worthy contributions have been made at their meetings, both in the papers presented and in the discussions which these papers have provoked.

The Two Meetings

The 90th Annual General Meeting of the Institution was held under the Presidency of Mr. G. E. Currier, O.B.E., at Church House, Westminster, S.W.1, from May 19 to 22. The Presidential Address, which included observations on the Report of the Ridley Committee and a review of the gas industry and the problems with which it will be confronted in the future was enthusiastically received. It was followed by a number of technical papers and discussions covering a wide range of subjects.

The 19th autumn research meeting was held at Church House, Westminster, under the Presidency of Mr. J. T. Haynes on November 24 and 25. In accordance with established procedure, the first day of the meeting was devoted to the presentation and discussion of the technical and educational reports of the Institution, together with the contributed papers by Sir Charles Ellis, F.R.S., on 'Some Aspects of Coal Pyrolysis,' Dr. D. McNeil, B.SC., on 'Composition of Coal Tars,' and the Institution's Research Fellow, Mr. D. H. Thompson, B.SC. On the second day six reports and papers by the directors and members of the staffs of the London and Birmingham Research Stations of the Gas Council were presented and discussed.

A presentation, similar in form to that made to Dr. P. C. L. Thorne, at the 90th Annual General Meeting, was made by the President to Mr. E. G. Stewart who, having now retired, has resigned from the Chairmanship of the Gas works Safety Rules Committee.

The Council of the International Gas Union had held a meeting at the headquarters of the Institution on November 23, and it was pleasing that thereby many of their members, from Belgium, France, Germany, Holland, and Switzerland, were able to be present for part, at least, of the autumn research meeting.

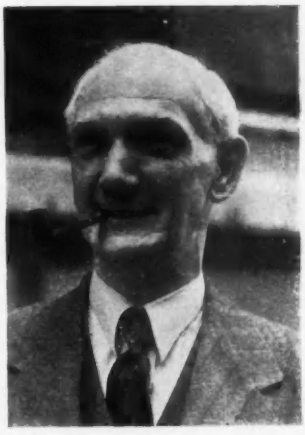
Residential Courses

The most important feature of the Institution's educational programme for the year was the initiation of an experimental residential course in management and allied subjects at Brooklands County Technical College, Weybridge. For this purpose the Council decided to employ the income for 18 months from a fund generously provided by the Woodall Duckham Construction Co., Ltd., for the furtherance of education.

The course, of seven weeks' duration, was attended by 15 students, one being drawn from each of the area gas boards and three from member firms of the Society of British Gas Industries, and, as far as was practicable, a balance between those engaged in the manufacture of gas and those concerned with distribution and utilisation was achieved. All the students were required to have qualified for Associate Membership of the Institution or to possess some other academic or professional qualification of equivalent status. The curriculum comprised studies in management studies and a number of lectures from eminent authorities, mainly from within the gas industry, on technical subjects, accountancy, law, industrial relations, and public and Press relations.

The undoubted success of this course has prompted the Institution to consider another course in 1954 which it is expected will be even more successful.

An eight weeks' course of instruction in mechanical and electrical engineering was conducted at the Bedford works of W. H. Allen, Sons and Co., Ltd., in the summer of 1953. Eight engineers from the gas industry attended this course, from which they derived great benefit. An offer by the Company to repeat the course in 1954 has been accepted.



J. T. Haynes, President of the Institution, 1953-54.

The final examinations for the former Higher Grade Certificates in Gas Engineering (Manufacture) and (Supply) were conducted in April. The standard generally was extremely disappointing and only 89 out of the 299 candidates who entered passed the examinations. Although lower than last year, the total number of candidates was relatively high compared with the average over a number of years, and it must be assumed that a large proporton of those who entered did so in the hope of passing the last of the examinations under the old-education scheme, though their state of preparedness was far from sufficient.

Most of the students now studying for the Associate Membership Examination are doing so by means of National Certificates in Civil and Gas Engineering, or in Mechanical Engineering, and are not yet ready to take the examinations in Gas Engineering (Manufacture) and (Supply) set by the Institution of Gas Engineers in collaboration with the Institution of Civil Engineers. A few candidates have, however, already presented themselves for examination and have all shown a reasonable standard.

City and Guilds

Although little progress was made in developing the examination in Gas Technology (Manufacture) of the City and Guilds of London Institute and the number of candidates is still relatively small, there was a marked increase in the number who entered for the examination in Gas Technology (Supply). This is in part due to the increasing number of candidates for the Institution's Certificate in Gas Salesmanship and Consumer Service, one requirement of which is a pass in Part I of the examination in Gas Technology (Supply). The standard in all these examinations was satisfactory.

The Institution's Register of Teachers continues to grow and now includes 46 teachers in Gas Engineering (Manufacture) or Gas Technology (Manufacture), 95 in Gas Engineering (Supply) or Gas Technology (Supply), and 289 in Gas Fitting.

A short course for Teachers in Gas Subjects was arranged at Manchester in July, 1953, by Mr. F. Caunce, H.M.I., who has taken over the mantle of Dr. P. C. L. Thorne in these matters. Sixty teachers were able to attend this most useful Course.

SOCIETY OF BRITISH GAS INDUSTRIES

Reasonable Optimism

Colonel W. R. Glover, C.M.G., D.S.O., Chairman of Council

IN alternate years since the war the country has been faced with a major financial or economic crisis. This year there has been none and it seems reasonable, therefore, to think that in fact our affairs are in better shape. The most urgent need still remains that of reducing taxation, which can be achieved if on the one hand Government expenditure is reduced, and if on the other hand our national production is increased so that taxation becomes more bearable by being spread over an increased national income. There is still much to be done, and there is certainly no room for complacency, but the pressure of inflation seems to have been reduced during the year, the cost of living appears to have become more stable, and our overseas payments are in better balance. These are important considerations on the credit side. The 'incentive' Budget introduced in the spring seems to have borne fruit.

Steel Plate Difficult

Steadily rising production figures and the repeated announcements of record outputs by the steel industry in the past few years have tended to obscure the extent of the problem, for instance, in regard to steel plates of which contractors for heavy plant for the gas industry are large users. In the spring a steel plate distribution scheme was introduced which under guidance from the Government has been operated on a voluntary basis. While falling short of being an allocation scheme it has had the advantage of facilitating direct contact between important consumers and the steel industry. The case for those members of the Society of British Gas Industries who are concerned has been placed before the committee which has been responsible for running the scheme, deliveries running in some individual cases at no more than about 60% of requirements.

If latterly there has been some improvement, the position in regard to heavy steel plate still gives cause for concern, since what is needed on the long term is that the steel industry should increase its rolling facilities for heavy plate to keep in step with increasing demand, and this the steel industry does not appear to be doing. On the short term it is obviously essential that the gas industry should get its fair share of present production. When the official steel distribution scheme was abandoned some special arrangements were made for tinplate, of which gas meter makers are large users. Otherwise we seem to be moving steadily away from restrictions and distribution schemes into a much freer economy. This process of transition inevitably brings its own problems, but the hope and expectation is that they will be transient, and that the productive capacity of the country and of the Society's members will be all the healthier for the widening of the field of competitive enterprise. In an increasing freedom from controls and restraints, success will depend on the initiative and enterprise of the management of each individual firm.

Hire Purchase

During the early part of the year overall production seems to have remained steady, but latterly it has been rising again. This has been the experience by and large of firms engaged in the manufacture of appliances, but as well there have been certain special factors to take into account. Water heating appliances, space heating appliances and washing machines are subject to purchase tax. In February, 1952, the Board of Trade issued an Order imposing in addition hire purchase restrictions on the sale of these appliances. The effect on sales and consequently on production was immediate and drastic. Purchase tax was lowered in the Budget, but this had little effect in face of the continuance of hire purchase restrictions.

The strongest possible representations were made to the President of the Board of Trade, and it was a matter of particular satisfaction that in August a start at least was made in that water heaters were declared exempt from the restrictions on hire purchase. The case for space heaters and washing machines continues to be pressed, and attention continues to be focused on the importance of a further reduction, if not the complete removal, of purchase tax on all gas appliances. The removal of the ban on promotional advertising is another important factor towards a freer and more active development of the domestic load. All in all a balanced assessment of the outlook for appliances would seem to be that a period of reasonably steady trade can be anticipated.

Display Collaboration

The appliance manufacturers co-operated with the Gas Council in staging a first-class display at the Ideal Home Exhibition in the spring, and the Gas Section there seems likely now to become an annual feature. The manufacturers staged a representative exhibition of appliances in connection with the Gas Sales and Service Conference. In these and in many other ways collaboration between the Gas Council and the makers is close and cordial. The Joint Consultative Committee of the Gas Council and the S.B.G.I. enables views to be constantly exchanged to the common benefit.

Conditions of Contract

There are other important directions in which the Gas Council and the S.B.G.I. are working together. Perhaps the most important of these is the task of securing agreement on and the adoption of conditions of contract to govern the erection and supply of plant on which the Society's members are engaged for the gas industry. Contracts running in total into large sums of money are in progress, and it is important that there should be a set of conditions negotiated at national level to govern work of this magnitude. Negotiations are in progress on a standard specification for refractory materials for gasworks, a project the importance of which speaks for itself. It has always been traditional and indeed one of the great sources of strength of the industry that we have dealt with our affairs within our own organisations in consultation with each other. The S.B.G.I. believes today as firmly as ever that irrespective of nationalisation that is the right way, and indeed the only way.

The Export Trade

During the years that steel was subject to an official allocation scheme, the Society acted collectively for its members in obtaining steel authorisations for export work. That has now ceased, but the Society continues to act for members collectively in connection with export trade in so far as a central organisation is needed. The restrictions have now been eased, and in this and other markets the Society's members are active in search of export business. New fields that are opening up where bottled gas or natural gas are available offer scope for future development, and members of the S.B.G.I. are active in seeking to establish themselves in these markets, which are likely to increase materially in importance as time goes on. Competition in the world's export markets is severe and is increasing.

'If'

The latter part of 1953 has seen a welcome revival in production of gas appliances. Plant manufacturers have about maintained their level of work during the year. It seems possible to look forward therefore to the new year with reasonable assurance in the hope that there will be no aggravation of difficulties with supplies of materials, that labour relations in the engineering industry will not deteriorate, and that the national economy will be maintained on an even keel.

Sir Geoffrey Shakespeare has accepted office as President of the Society in succession to Lord Baillieu. Colonel W. R. Glover has succeeded Mr. W. H. G. Roach as Chairman of the Society's Council, and Mr. J. Simpson has been elected Vice-Chairman of the Council.

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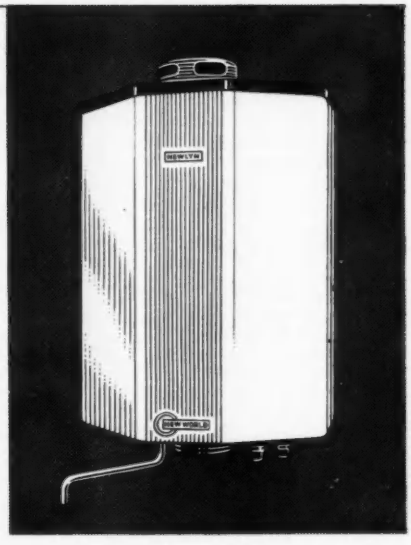

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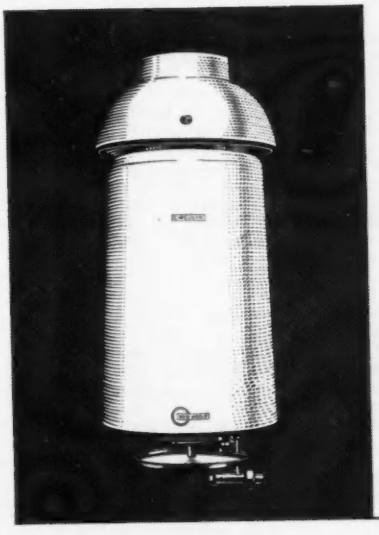

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Normally no alteration to the meter service, no peak load problem and nothing further to worry about . . . **Minimum Servicing**

THE CIRCULYN

The NEW WORLD Circulyn can be fitted to an existing hot water system as an auxiliary, or as the sole means of supply and gives an abundance of hot water summer and winter to the bath, basin and kitchen sink: it does not dispense with the airing cupboard facilities.

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INDUSTRIAL GAS

Development in 1953

THE fourth annual report of the Gas Council shows that 25% of the load is industrial. This load accounts for a revenue of £31 mill. and shows a slight increase over last year, but the rate of increase in gas sold was retarded by the recession in trade in the first half of the financial year. The industrial side of the gas industry is meeting increased competition from oil, particularly in the bread baking and metal melting industries. There is no disguising the fact that for some industries, and in certain areas, oil can be sold at a lower price per therm than gas.

Gas has a substantial amenity factor in industries such as the baking industry, where the advantages of gas, namely, cleanliness, ease of control and flexibility, are well-known. Gas continues to be required for many purposes where precise control is needed and where there are difficulties in the use of oil. In the meantime, every effort is being made to design plant which will ensure the utmost economy to the consumer. Modifications to existing designs have often prevented possible losses of load, and sometimes gas has captured loads from oil. It is the aim of the industry to utilise to the full the great advantages of gas wherever possible as a means to this end. Close relationships between the industrial staffs and the consumers, which have always been a most important factor of the industrial side of the industry, are most effective in making clear to the consumer the advantages of gas.

Controls

More and more industrial gas plant is required to operate under conditions which demand service over a long period with the minimum of attention. This, coupled with the growing importance of line production in some industries, means that plant requires to be completely under control and many units under automatic or even remote control. This has necessitated close attention to the design of control devices, ranging from electronic ignition and flame failure devices to the design of specialist pieces of equipment, such as magnetic valves, gas operated temperature indicating controllers, etc.

Particular attention has been paid during the year to the design and development of non-return valves, the investigation into which is continuing. The Industrial Gas Development Committee has been associated with the British Standards Institution's publication 'Pressure-operated Relay Valves for use with Town Gas' (B.S. 1963: 1953).

The wide problem of the control of multi-burner equipment has received active consideration. In many appliances, individual jets do not light from each other and special means have to be taken to ensure the maintenance of a flame at the burner heads. The problem is complicated by the necessity to minimise the gas rate of any system of multi-pilots which, in themselves, may require as much gas as the maintenance rate of the appliance. There is the additional problem which has been investigated for many years on both sides of the Atlantic on the design of ladder pilots which are suitable and reliable. Considerable progress has been made in this work and there are some proprietary devices now available. The theme underlying the development of controls is that they must be absolutely reliable and relatively simple to construct and operate.

New Publication

The present work on controls has been summed up in the document 'Ancillary Equipment for the Operation and Control of Gas Heated Plant—A Review of the Present Position," which was published in June. Four thousand copies have been circulated to members of the gas industry and also to manufacturers both of control devices and of industrial gas equipment. This review, like 'Flame Failure Devices—A Review of the Present Position," published in 1950, sets out to give a lead to industry on the types of device available, deals with their characteristics, suggests methods of fitting and servicing, and makes certain recommendations concerning their use.

Design of Equipment

It is important to design equipment to ensure the utmost return to the consumer, quite apart from the competition from other fuels. Stress continues to be laid on the importance of good insulation, the use of insulating refractory materials wherever possible, and the really important point that the burner and the combustion chamber should be regarded as the starting point in the design of equipment. The use of properly designed equipment in which close attention has been paid to the burner and combustion chamber has already resulted in striking advances in speed of heating and economy in use and this will continue. In all this work, the collaboration of member firms of the Society of British Gas Industries and the Society of Furnace Builders, and of other firms in the industry, has been welcome. The close contact with all these firms in matters of design and development is a great source of strength to the industry.

Greater Stress

The pattern of industrial gas use is changing rapidly and for some reasons, notably the need for high operating temperatures and for greater productivity, both of which imposes greater stress on equipment, it is necessary to keep the industry fully informed wherever possible of such developments, since local industrial engineers are normally fully occupied with the task of developing, maintaining, and even keeping the existing load. The system of dissemination of technical reports throughout the industry which has been going for many years through the ægis of the Industrial Gas Information Bureau, continues to offer a service in this respect which is considered unique in the fuel consuming industries.

A growing number of reports prepared by the industry are now made available to the Press, thus ensuring the widest possible circulation of information. Naturally, there are difficulties in circulation of information relating to processes and it is not always easy to publish details of something which a particular manufacturer has helped to develop. Associated with the technical reports is a growing demand for first-class photographs.

Industrial Gas Development Committee

All the work mentioned is co-ordinated by the Industrial Gas Development Committee, whose sub-committees continue to cope with the three main functions of its work:—(1) The design and development of appliances and controls to give the best possible performance; (2) the preparation and staging, in collaboration with the Exhibitions Department of the Gas Council, of a number of exhibitions; and (3) the preparation and editing of material for circulation to industrial gas staffs.

A second Industrial Gas Conference was held in May on the occasion of the British Industries Fair, and there is no doubt that this is of growing importance to industrial gas staffs. It enables them for a short time to get together and discuss their problems. A further conference is arranged for next year on May 11, at the British Iron and Steel Federation Mansion, Ashorne Hill, near Leamington Spa.

In the last annual review, mention was made of the Gas Council's decision to appoint an Industrial Gas Officer. This appointment has now been made and Mr. R. F. Hayman has been in office for some eight months. It is hoped that the advantages to the industry of this appointment will grow steadily.

Stress had been laid on the importance of contact with many organisations whose work impinges on the work of the industrial gas staffs, and through the Gas Council contacts are frequently made with research associations, Government Departments, and other important bodies, such as the British Industrial Measuring and Control Apparatus Manufacturers' Association, British Chemical Plant Manufacturers' Association and the Bakery Equipment Manufacturers' Association, so that the utmost use can be made by them of the facilities offered by the industry.

The area boards have recognised that technical progress in industrial gas utilisation must be matched by the lowest possible economic charges for gas supplied. The East Midlands Board has recently agreed to give a 10% discount off published prices to certain of its consumers using gas continuously, and the Southern Gas Consultative Council has set up a special sub-committee to examine the whole question of charges to large industrial consumers.

COAL

Stocks still at a Low Level

COAL supplies, in their broadest aspect, managed to live up to their rather wearisome reputation throughout the year. It will be remembered that between the autumn of 1951 and the autumn of 1952 there had been a number of prolonged periods of fine weather with temperatures somewhat above average and, for that reason, the coal supply situation a year ago had been rather more comfortable than in the immediately preceding years. A further beneficial influence upon supplies had been a slackening of demand for coal due to a slight but regrettable set-back in normal trading conditions. The effects of these two influences probably passed unnoticed to the majority but, in fact, they were the means of providing substantial stocks of coal all over the country in the opening weeks of the year 1953, and at a time when demand is usually at its highest level. It so happened that during last winter there were but few climatic upsets, beyond a tragic period of smog, so that coal supplies were kept moving against a long-sustained demand arising from cold weather conditions which persisted with only a few breaks up to the end of April.

Production Disappoints

Coal production throughout last winter remained sullenly disappointing, but the result of this was masked to some extent by withdrawals of coal from colliery stock piles and from central dumps. Deep-mined output subsequently became news, however, when it was realised that the miners were showing little intention of raising sufficient additional coal to cover the loss due to the Coronation Holiday and the extra week of annual holiday which they had been granted, and which was to be taken in the summer of 1953 for the first time. The recruitment of extra labour, mechanisation and national exhortation all sought to exert a beneficial influence on output, but with little apparent success. The effect of the extra holidays in 1953 had been calculated to reduce output by more than 5 million tons of coal, whereas in fact, the loss of output, speaking in advance at the end of the year, will be about 2 mill. tons only. It could be said that to this extent the miners have produced more coal during the time they have been at work, but this would appear to beg the question of coal output. The truth is that abstention from work is of the order of 12½%, and that in too many cases the extra shift work on Saturday morning is associated with absence from work on Monday.

Swans on Avon

Throughout a summer season of equable temperatures considerable efforts were made to ensure an adequate distributed stock of coal to all main classes of consumers before the winter season started. Superficially, a satisfactory position was achieved but, as in the apochryphal story of the swans swimming serenely on the Avon, a lot of 'paddling like hell' was needed below the surface before they got there. For instance, it became necessary again to import coal, on this occasion from Europe, and contemporary with our own export of coal to the self-same countries. Again, the gas industry was required to forego delivery of 150,000 tons of graded coal to help stocks in other markets. Nor was this all. As on previous occasions, the industry was requested by the Government to limit the quantity of coal it proposed to carbonise to a lower figure than was believed to be economic, and to make up the requirement of gas by the use of additional gas oil.

The Coking Industry

It seems that the Government is less concerned to curb the use of carbonisation coal in every other direction than to curb the carbonisation of coal at gasworks. Nor can the present phase of substantial expansion of the coking industry be regarded with equanimity. The amount of coke oven gas which the gas industry now buys comes mostly from coking installations owned by the National Coal Board, and adjacent to their collieries. There has been little increase in this source in recent years, and practically all the substantial additions to coking capacity have been on account of new installations at iron and steel works, where the coal gas so produced is needed, in the main, for internal consumption. In other words, the gas industry does not benefit to the same extent as in the past from the total quantity of coal carbonised by the 'other half' of the industry.

Level of Stocks

The question of continuing shortage of suitable coal for the gas industry is of some importance. At the start of the present winter, and because of restricted deliveries, the total stock of gas coal was 3.2 mill. tons, distributed over the areas to give an estimated reserve varying between 3½ and 6½ weeks of maximum requirement. These stocks need to be considered in relation to a limitation which the Government has imposed on the quantity of coal to be made available for gasmaking in the winter period, so that the stocks held by the gas boards will amount in total to no more than 2 mill. tons, or three weeks' supply, by the end of the winter. This is little enough, perhaps insufficient if the weather should prove to be too seasonable later on. It would seem certain that stock building during 1954 is destined to start from a low level. True, the national level of stocks of coal for all purposes earlier this winter stood at the satisfactory level of 19 mill. tons, but an observation on this figure is not without interest even though in reality it is hard now to envisage a coal crisis after experiencing such a prolonged and beneficial period of almost summer-like weather conditions.

The quantity of coal required this year for inland and export purposes was about 4 mill. tons more than last year. The loss of coal on account of miners' extra holidays has not been wholly made up by the higher rate of production. Over the year the output of opencast coal was down by half a million tons and so there was a deficit of about 2 mill. tons. The combined deficit on account of smaller total output and bigger demand appears, therefore, to be about 6 mill. tons, and this might be expected to reflect itself in the stock position in the forthcoming year. If our national prosperity is to continue to advance, the problem is how to remedy this deficit in the face of a rising demand for all rational forms of fuels and consequently a rising consumption in the quantity of coal required for the production of gas, coke, and electricity. The answer lies in an extra production of coal or in further imports. The output of coal regulates the price at which coal has to be sold; changes in coal prices to meet small changes in coal outputs should themselves be small, yet the last coal price increase, in March, was as much as 10%, equal to an average increase of 6s. 6d. a ton in the price of gas coal. Further wage increases are now being demanded by the miners and so the trend in rising coal prices could continue for as long as coals are in short supply.

Light under Bushel?

Carbonisation coals and graded coals might be priced at still higher levels; the gas industry might suffer worse treatment than most others because it prefers well graded carbonisation coal of low ash and sulphur content, despite the fact that it has the capacity to make better use of those coals than other consumers. It may be that the gas industry hides its light under a bushel or that its beneficent services are too readily accepted. The fact remains, however, that it does not appear to get its full share of the extra coal required to sustain the present high demand for fuel; it does, however, appear to be expected to pay dearly for what it gets.

A Bigger Proportion of the Right Coal—Or

There is no lack of output of carbonisation coal in this country; the root of the trouble is that insufficient coal is produced in total, and so carbonisation coal has to be used in some degree by practically all consumers. Unfortunately, a large and growing proportion of the total output of coal is in small sizes and much of it contains a high proportion of dirt, which in more rational times was not allowed to leave the coal face. The utilisation of this small, dirty coal is a growing problem which, very conveniently, is being partially solved by the expanding requirements of the power stations. The extent to which the preponderatingly large body of industrial and domestic consumers can further economise in the use of coal is questionable. The answer surely lies in an adequate production of coal of reasonable quality and, so far as we are concerned, the carbonisation of a bigger proportion of that coal by the gas industry. Otherwise, the gas industry will have to apply itself quickly to the perfecting of processes for the gasification of coal and so be free from embarrassments created by the mining industry. It might have to consider, as a matter of some urgency, the gasification of oil. There certainly would appear to be ample justification for the decision of the Gas Council to enter seriously into the search for sources of natural gas. Never more than at the present time would it be fitting for that search to be rewarded in generous measure.

COKE

An All-Round Improvement in Supply

THE recent increase in the winter allocation of coke to domestic consumers from 30 to 40 cwt. reflected the all round improvement in the supply position. In the year covered by the recently issued annual reports of the Gas Council and the area boards the production of gas coke was maintained at a higher level than ever before, and reached 12,506,000 tons. Total sales were 10,325,000 tons (including 587,000 tons exported), compared with 10,402,000 tons (including 170,000 tons exported) for the previous 12 months. Stocks of coke at gasworks at the end of the financial year were nearly 800,000 tons—some 450,000 tons greater than at the end of March, 1952. More than one-third of the stock was in the area of the North Western Gas Board, and less than one-third in the areas of the five boards in the south which produce about half the total coke.

Increases in the price of coke to compensate for increases in railway freights and in the cost of road haulage, varying between the boards, were authorised by the Ministry of Fuel and Power, and adjustments were also allowed in the wholesale distributors' margins. The greatest increases were those authorised last March in consequence of the 10% increase in the pithead price of coal. The increases permitted for this cause ranged from 5s. 10d. to 8s. per ton.

Sizing Standards

Preliminary examination into the standard of sizing of coke sold by the area boards has been completed and has shown that most of the larger plants in the country are producing coke conforming to the size limits recommended by the Institution of Gas Engineers. General improvements in coke preparation plants have been delayed by limitations of capital and materials, but where the investigation revealed continuous variations in the standard of sizing, plants have been modified to minimise the variations. The principle of the regular routine testing of domestic coke for size has been accepted and is being applied by boards in the larger works. Further consideration has been given to the possibility of standardising coke screening plants, particularly for the smaller works, and the Gas Council is collaborating with the British Standards Institution in developing a standard method of testing such plants.

Twenty-three new items have been added to the Gas Council's list of approved coke burning appliances. The greater facilities now available in the laboratories of the area boards have allowed more appliances to be tested and a better service to be offered to the makers. Increased attention has been paid to the automatic control of independent domestic boilers, which are now being supplied with efficient thermostatic control in sizes down to 40,000 B.Th.U. per hour. Consideration is also being given to the development of small free standing coke burning stoves for the heating of caravans, kitchens, and small rooms.

New Types of Appliances

For central heating and industrial purposes a new coke-burning forced-draught gravity-feed boiler has been designed by the makers in co-operation with the Coke Department of the Gas Council, and a large transport organisation in South East England, on the advice and with the help of the Coke Department, has installed 23 of these boilers in its garages. It is estimated that when in full operation the boilers will save the organisation about 200 tons of coke a year on a former total consumption of 1,700 tons.

Coke Department's Work

Two interesting new types of completely automatic high efficiency coke-fired boilers of Continental manufacture are under investigation. A prototype of one of these boilers, modified to meet British requirements, has been manufactured in this country and is to be tested by the Coke Department. Tests on a prototype semi-producer furnace designed by the Coke Department to operate on industrial process work at temperatures up to 1,200°C. were successful, and the furnace is now being used under observation for a number of industrial processes, including lime burning, brick kilns, and the curing of prefabricated concrete products.

A small coke heater developed by the Gas Council for grain drying in sacks and bins continues to give satisfactory results, and an increasing number of these heaters are at work. A prototype dairy sterilising boiler to provide hot water for washing and steam for sterilising has been developed and tested with satisfactory results, and arrangements are being made for the manufacture of this unit. Site tests have been carried out on a large grass dryer of popular make which was fitted with a semi-producer coke furnace, mechanically charged, and have proved very promising. The Coke Department of the Gas Council has continued its membership of the Solid Smokeless Fuels Federation, the principal object of which is to promote the use throughout the country of coke and other solid smokeless fuels.

South of England Marketing

Perhaps the most outstanding event in connection with coke in 1953 was the approval by the Minister of Fuel and Power of a new coke marketing scheme for the south of England submitted by the Eastern, North Thames, South Eastern, Southern, and South Western Gas Boards, whose areas, in prenationalisation days, were served by the London and Counties Coke Association. The scheme, which had been under consideration for a considerable time, is designed to provide a simplified price structure and an improved service to all types of consumer. The main points that had to be borne in mind in the formulation of the scheme were that it had to be simple and economically sound, it had to assist in ensuring that the right type of coke was delivered at the right place at the right time, and it had to satisfy the hard coke industry.

Then—200 Schedules

Before the introduction of the new scheme there were in operation in the area covered by the scheme over 200 price schedules based on the former gas undertakings' areas. Extra charges were made for sized coke, and contract prices depended on annual tonnage taken. Maximum coke prices, approved by the Minister as part of the scheme, will in future be the same over wide zones, whatever size of coke is supplied, and no matter from what source. Prices within a zone will vary only in so far as it is necessary to compensate for costs in relation to the size of the delivery which the buyer is willing and able to take at one time, the geography of the zone, and regularity of business.

Now—18 Zones

The area of the five gas boards has been divided into 18 zones based on local authority areas. In each zone coke will be sold to all comers at works at 'current price ex works,' or for regular business covered by contract and arranged to suit the boards' loading time schedules, at a reduced price known as 'contract price ex works.' If coke is delivered to consumers' premises, the price to the consumer will be based on the size of the delivery the buyer is willing and able to take at one time to any individual address.

Advisory Service

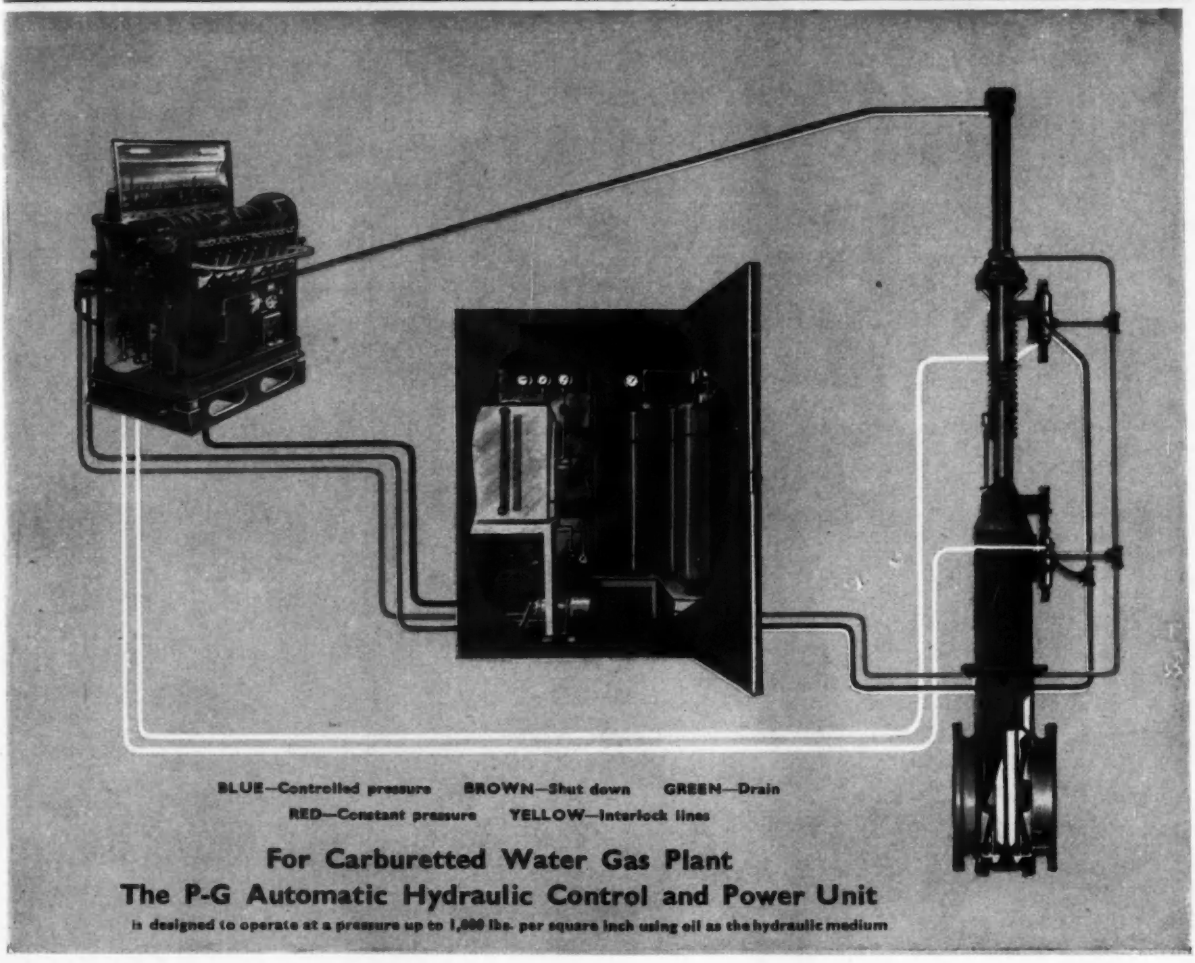
A feature of the scheme is the recognition of the important part which the distributors play in marketing coke by providing an efficient advisory service, backed by the gas boards. To achieve improved service the boards will each appoint authorised distributors who will undertake to reach an agreed standard of technical service to consumers, for which an allowance will be made on the contract price ex works. The boards propose at their option to seek the services of certain distributors who are able to receive or collect coke from other than the local works to suit the convenience of the board. Allowance for the extra expense will be made off the contract price.

Further Schemes to Come?

The scheme follows closely the recommendations in a report on the future of coke marketing which was presented to the Gas Council some three years ago, and is likely to be adopted, with some minor modifications, by the East and West Midlands and Northern Boards. It is hoped that within the measurable future there will be such schemes covering the whole country.

Another noteworthy trend is the increase in the strength of the agitation for smokeless zones, which will undoubtedly lead to increases in the load to be met by the smokeless fuel industries—gas and coke, electricity, and solid smokeless fuels other than coke. The availability and distribution of solid smokeless fuels was the subject of a paper at the National Smoke Abatement Society's annual conference in Glasgow in October by J. O. Cooke, Coke Officer of the Gas Council, E. J. David, H. H. Prosser, and

PG AUTOMATIC HYDRAULIC control



BLUE—Controlled pressure BROWN—Shut down GREEN—Drain
RED—Constant pressure YELLOW—Interlock lines

For Carburetted Water Gas Plant
The P-G Automatic Hydraulic Control and Power Unit
is designed to operate at a pressure up to 1,000 lbs. per square inch using oil as the hydraulic medium

The controller is of the single camshaft type with double cams for each control valve, capable of adjustment for both duration and make-up of the gasmaking cycle, and is arranged for electric motor drive.

Safety hydraulic back locking is incorporated and any attempt to operate in a dangerous sequence would bring emergency shut-down equipment into action, the plant being set to a safe standby position.

A Lockheed power cabinet, mounted on the operating stage, encloses a supply tank with float operated alarm and cut-out switches, electric motor driven power pump and accumulators.

The operating cylinders are entirely self-lubricating and are rendered fluid tight by the newest form of seals, which are of a special synthetic rubber.

The equipment is described more fully in a pamphlet available on request

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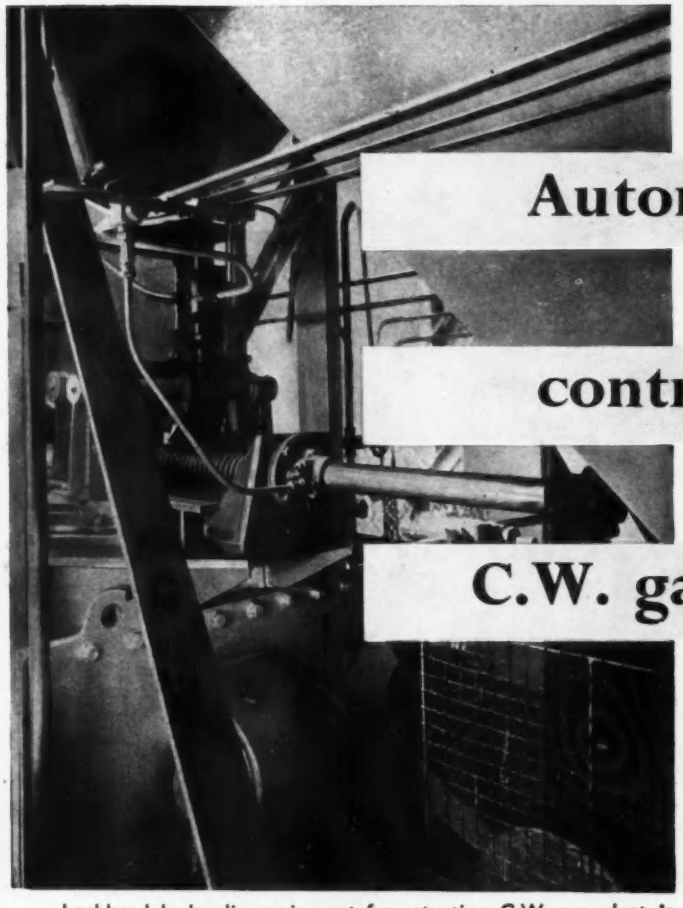

Automatic control of C.W. gas plant

Lockheed high-duty cylinder and interlock control.

Lockheed hydraulic equipment for actuating C.W. gas plant is being used to a rapidly increasing extent.

What has been stated to be one of the largest single contracts for C.W.G. plant has recently been placed with The Power-Gas Corporation Ltd. by the North Thames Gas Board, for installation at their Beckton works.

This plant—with a total daily productive capacity of 18,000,000 cu. ft. of gas, will have automatic cyclic control by the P.G.C. oil-hydraulic system, with Lockheed equipment operating at pressures up to 1,000 p.s.i.

The single-camshaft controller, with double cams for each control valve, can be adjusted to vary both the duration and make-up of the gas-making cycle. Synchronising equipment is provided to keep the plants in step.

Lockheed hydraulic equipment can be used to operate, either by power or by hand, any remote controls, with a high degree of accuracy and with the absolute minimum of maintenance.

Enquiries are invited.

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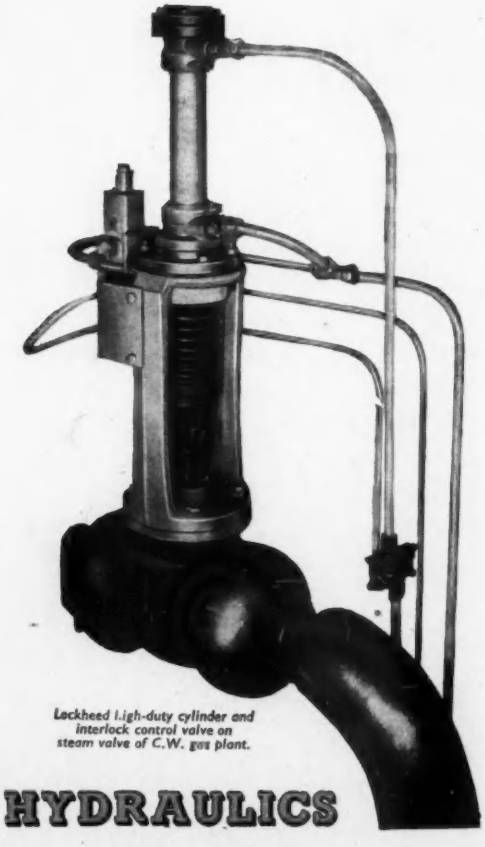


Lockheed high-duty cylinder and interlock control valve on steam valve of C.W. gas plant.

Lockheed

REGD. TRADE MARK

INDUSTRIAL HYDRAULICS

Commander Colin Buist. They said that supposing all the domestic coal burnt in the areas of heavy smoke pollution had to be replaced ton by ton by solid smokeless fuels, the quantity required would be of the order of 13 mill. tons, a figure within the competence of the solid smokeless fuel industries, say, in a 10 years' plan. In practice, because of the greater output of useful heat from smokeless fuels in modern appliances, very much less would be required, even if no part of the existing coal usage was replaced by gas and electricity. To take this big forward step something less than an additional 10 mill. tons of solid smokeless fuel would be necessary.

It was confidently declared that given freedom from restrictions and the right sort of support from national and local government it should be possible to make available 10 mill. tons in the domestic market by 1957, and by 1962 to increase the tonnage to 15 mill. tons. As a prerequisite to expansion in the domestic market three conditions are needed: (1) Solid fuel supplies should be such as to give all users assurance that their supplies will not be withdrawn under direction to help eke out inadequate supplies of other fuels; (2) new solid smokeless fuel appliances should be freely available to all users at reasonable prices; and (3) merchants and other distributors shall in conjunction with producers provide an efficient advisory service.

B. G. S. A.

THE year has been one of continued and increasing activity for the British Gas Staff Association, which deals solely with the affairs of gas non-manual employees. Its representatives at national level and on all the area joint councils for gas staffs have assisted in the negotiation of matters arising from the national agreements on conditions of service and taken such other steps as appeared necessary and expedient to improve those conditions.

The B.G.S.A., being an industrial union, is interested in the affairs of the gas industry itself, as was shown at its annual conference at Brighton. That conference, in addition to debating many matters concerning gas conditions of service, urged the Minister of Fuel and Power to remove the ban on promotional advertising by the gas industry. It also asked the Chancellor of the Exchequer to remove the restrictions on the hire-purchase of certain gas appliances as such restrictions were causing hardship to consumers, the industry, and to appliance manufacturers. Success was achieved from the representations made from many sources regarding those two matters. The B.G.S.A. has also urged a national fuel policy and a greater use of smokeless fuel and has deplored the increasing dependence of the gas industry on the National Coal Board for supplies of gas from coke ovens. Coke ovens, says the B.G.S.A., should belong to the gas industry.

The Association, which follows the activities of the gas consultative councils with keen interest, has recently detected an apparent tendency of some of those councils to extend their consideration to matters which can hardly be said to be of direct concern to consumers and which might, if allowed, have an effect even on negotiations of employees' conditions. This tendency will be carefully watched.

The B.G.S.A. believes that an informed and understanding staff is essential to a progressive and successful gas industry. It has therefore organised week-end schools which have been enthusiastically attended and at which the students showed a keen interest in the addresses given by board chairmen and industrial relations officers on the affairs of the industry. It has applauded the encouragement given by Sir Harold Smith and the Gas Council to the employees' consultative committees and is prepared to play its part in furthering the success of real consultation between management and staff on the efficiency of the industry.

The growing activities of the B.G.S.A. have necessitated an additional officer and the Association has appointed Mr. L. H. Tune, of Birmingham, as its new Midlands Area Organiser, to cover the West Midlands, East Midlands, and North Eastern areas. Mr. Tune has been employed in many capacities in the gas industry at the Birmingham undertaking, for 28 years.

The Association's Journal, *Thermfare*, has a steadily widening circulation and the B.G.S.A. also acknowledges, with great appreciation, the assistance it receives from the 'GAS JOURNAL.' The National Council and officers of the B.G.S.A. offer their best wishes for 1954 to the management and staff of the industry.

N. A. L. G. O.

AN important event in 1953 in the domestic life of the National and Local Government Officers Association, was the introduction of new machinery to meet the needs of its wider membership, enabling all service groups within the Association to act in equal partnership and operate on similar lines. Under the re-adaptation scheme the former district and national consultative committees, which represented the interests of staffs in the nationalised industries and services, have disappeared.

In each of the 12 areas, a district service conditions sub-committee for gas staffs has been appointed to make recommendations on all matters relating to the salaries, service conditions, recruitment, and organisation of gas members. The national service conditions sub-committee effects liaison between the rank and file member and the National Executive Council, and between the member and his representative on the staff side of the Whitley Council dealing with his pay and conditions of service. Interests of all members and the activities of all the national service conditions sub-committees are co-ordinated by the parent service conditions committee of the National Executive Council, which directs in all fields the policy laid down by conference.

An important decision taken at the 1953 conference was that greater unity among gas staffs would strengthen their position in the negotiating machinery. Accordingly, it was decided that the Association would approach the British Gas Staff Association with proposals designed to lead to the amalgamation of the two organisations within the framework of Nalgo. It was felt that gas staffs, thus united, would benefit further from contact and unity with colleagues in other spheres of the public service, all banded together in Nalgo. We understand that the proposals are now being examined by the B.G.S.A.

A claim for increased salaries for gas staffs has been put forward, following a decision of the annual conference instructing Nalgo representatives on the Whitley Council to seek substantial rises in pay. The claim was presented to the National Joint Council for Gas Staffs last month when consideration was deferred. Mr. J. E. N. Davis, Nalgo's Chief Organisation Officer, relinquished the position of Staffs and Joint Secretary to the National Joint Council, and Mr. G. H. Newman, Nalgo's Organising Officer for Gas Staffs, was elected to succeed him.

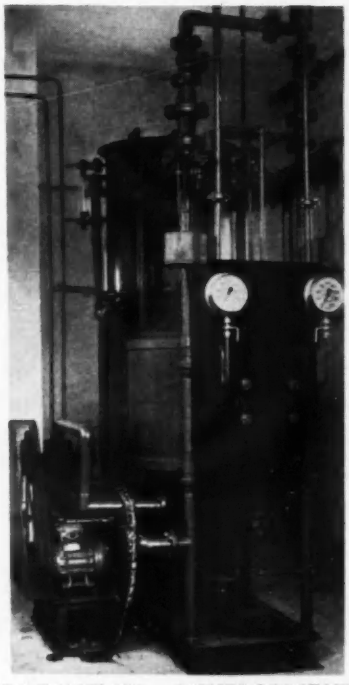
Mr. Davis continues to serve as Officers' Side Secretary on the Senior Gas Officers' Joint Council. In May, that Council finally resolved its negotiations on cost of living increases for senior gas officers, which were applied from January 1.

Mr. Newman writes: 'The gas membership of Nalgo continues to grow in numbers and strength. They are united in their aims and ideals and they cooperate in friendly association within Nalgo with colleagues in other branches of the public services.'

PICTORIAL

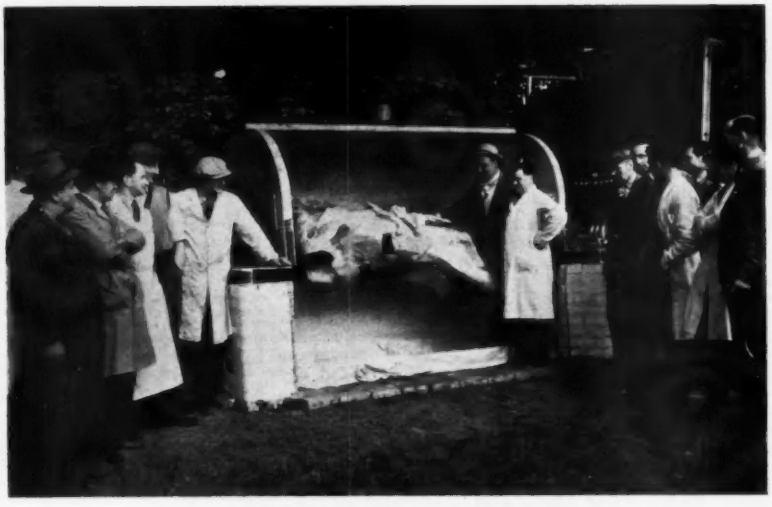
BUILDING CENTRE SECTION OPENS

In January the long-awaited opening of the gas section at the Building Centre in Store Street, W.1, took place, and the industry became the possessor of one of the finest 'shop windows' in the country. Designed by the Gas Council's Exhibition's Department and Montague V. Reed, M.S.I.A., the new section showed gas and coke appliances in original and effective settings, and provided the architect, builder and student with an attractive but accurate picture of what the industry has to offer. All types of domestic appliances were shown, as well as large scale catering equipment. Features of the section included a neatly curtained stage for displaying exceptional new products and a pleasant lounge and reference library. The section is visited by many organised parties.



BUTANE/AIR DEVELOPMENTS

Following within 12 months of Britain's first full-scale experiment (at Whitland, Carmarthenshire) in substituting a butane/air mixture for coal gas, distributed through existing mains, the small undertakings at Framlingham in Suffolk and Bungay in Norfolk, both in the area of the Eastern Gas Board, instituted a similar changeover on New Year's Day. Above is the unit which mixes the butane and air.



CORONATION FESTIVITIES

The event of the year for the gas industry, as for the whole of the Empire, was the Coronation of Her Majesty Queen Elizabeth II. The industry made substantial contribution to the decorations and also to such events as that illustrated above. This was the ox-roasting ceremony performed at Idle for which a special gas-fired oven was built by the Bradford Group of the North Eastern Gas Board.

RADIO VANS IN NORTH WEST

On September 22 the Chief Constable of Liverpool released for duty a fleet of two-way radio-telephone emergency repair vans which the North Western Gas Board has introduced in the Western part of its territory. The photograph on the right, taken in the Control Room at Liverpool, shows, left to right: Mr. C. H. Leach, Liverpool Group General Manager, Miss Elizabeth Allan, of television fame, the Chief Constable, and Miss Frances Day, the actress.

FLASHBACK

NATURAL GAS EXPERIMENTS

As 1953 draws to a close our thoughts and hopes are centred on the Gas Council's £1 mill. search for natural gas, first explorations for which have just commenced. These are taking place in the East Riding of Yorkshire. The photograph shows a shot firer exploding a dynamite charge in a shot hole.

BEATING THE FLOODS

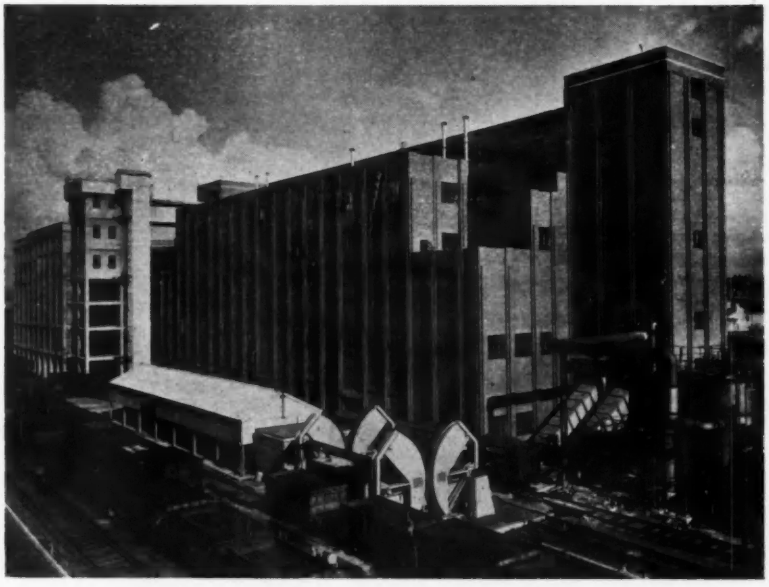
At the end of January Great Britain experienced one of the worst floods in its history, bringing death to over 300 people and rendering thousands homeless. The gas boards principally affected were the North Thames, South Eastern, Eastern, and East Midlands, and all were highly commended for the manner in which gas supplies were restored and emergency service was given. The photograph below, taken at Mablethorpe, shows Mr. L. B. Chapman, Skegness Group Manager, with Mr. Smalley, Distribution Superintendent, surveying the scene of devastation.

SUCCESSFUL SALES CONFERENCE

The year 1952 saw the first Gas Service Conference. In 1953 the word 'Sales' was added to the title and the programme had a stronger commercial flavour; a civic reception by the Mayor of St. Marylebone (the conference was again held at Seymour Hall, W.1) added distinction to the event. The conference was opened by His Royal Highness the Duke of Gloucester, who commented on the great tradition behind the gas industry. At every stage of its career, he said, it had shown an extraordinary power to adapt itself to the needs of the community and to the changing demands of commerce.

NEW PLANT

SWAN VILLAGE



Rear of retort house showing wagon tipplers and coke screening plant.

THE official opening of the new works at Swan Village on October 9 marked probably the most important gas industry project of 1953.

Sir Harold Smith, Chairman of the Gas Council, conducted the inauguration and unveiled the commemorative plaque. In proposing the toast of 'The City of Birmingham' at a luncheon on that day, he paid tribute to the Corporation for its management which had resulted in a first-class gas undertaking being handed over to the West Midlands Gas Board. The new works would not only serve parts of Birmingham, he said, but also form an important key point in the integration of South Staffordshire undertakings and would be a further step towards shutting down obsolete plant and ensuring more economic supplies.

It was possible, within the limitations and physical restrictions of the site, to install coal-gas plant of 8.5 mill. cu.ft. per day capacity, and, by installing a new 3 mill. cu.ft. per day water gas machine in an extension to the water gas house at the old works, to provide for a total production of 11.5 million cu.ft. per day.

With this combination of coal gas and water gas plants the retort house normally operates at high throughputs, making gas of high calorific value and the water gas plant at low calorific value with minimum oil enrichment to produce a mixed town gas of 450 B.Th.U. per cu.ft. This is the cheapest method of working in present circumstances, but the operating conditions can be varied within wide limits by reducing coal throughput in the retorts, using more oil on the water gas plant, and producing less coke for sale while still maintaining the same total production of gas. In fact, the flexibility of this combination of plant is such that without alteration to total gas made, annual coal requirements can be varied between 180,000 and 138,000 tons, with corresponding variations in coke available for sale between 61,000 and 34,000 tons, based on a load factor of 83%.

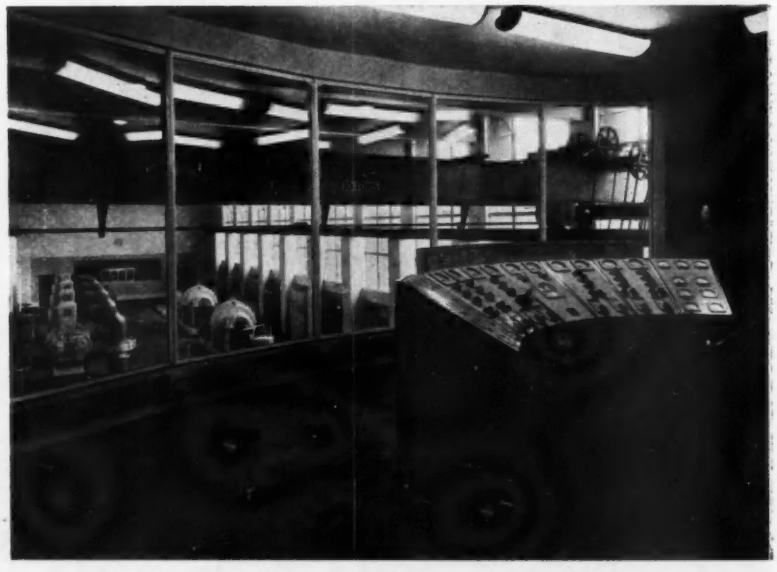
The new installation of Woodall-Duckham continuous vertical retorts comprises four benches each containing 16 in. by 82 in. lambent heated retorts with a total guaranteed throughput of 530 tons of coal per day giving a daily gas output of 8,500,000 cu.ft. at a calorific value of 475 B.Th.U. The retorts are heated by four Humphreys & Glasgow mechanical hot gas producers with a fifth producer acting as a standby. The installation is provided with complete coal, coke and ash handling plants, producer gas dilution plant, and four waste heat boilers fitted with economisers and superheaters.

The retorts are heated by the lambent heating system using hot dedusted producer gas. There is only one point of admission and control of producer gas on each side of each retort: secondary air for combustion is admitted at three or more levels, thus permitting temperature zoning as required. The retort seating castings and supporting steel-work are cooled by the circulation of secondary air, prior to its admission to the settings, thereby not only safeguarding against overheating but also enabling the producer fuel consumption to be reduced by 7% to 10%.

The water gas machine, already mentioned, was designed to produce gas of any calorific value from 300 to 600 B.Th.U. per cu.ft. The plant comprises self-clinkering generator, carburettor, superheater, washer, and primary condenser. Waste heat steam is generated in a horizontal boiler at 135 lb. per sq. in. and super-heated to 200°F., and low-pressure process steam at 35 lb. per sq. in. is produced in the generator annular boiler.

All the gas from the old and new works (21 mill. cu.ft. per day maximum) is distributed to three medium-pressure mains. This duty is met by three electrically-driven Bryan Donkin boosters, two having a capacity of 1.2 mill. cu.ft. per hour each at 90 in. W.G., and one of 0.9 mill. cu.ft. per hour at 42 in. W.G. outlet pressures. Gasholder storage has been augmented by the installation of a new four-lift spiral-guided holder in steel tank with a capacity of 5 mill. cu.ft., constructed by Clayton Son & Co., Ltd.

Special attention has been paid at the Swan Village works to the welfare of works personnel. Amenities provided in an annexe to the retort house include a messroom for shift-workers, and all workmen have two lockers each—one for working clothes and the other for walking-out clothes.



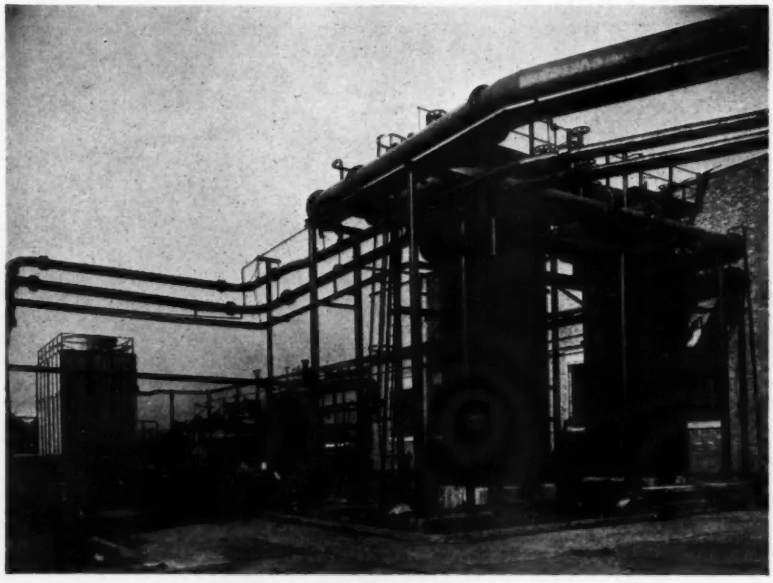
Control room overlooking power house.

INAUGURATED

MAELOR

DESCRIBED by Lord Lloyd, Parliamentary Under-Secretary of State (Welsh Affairs) to the Home Office, at an inaugural ceremony, as an example of the enterprise that had marked Wrexham's industrial activity over the past 120 years, the new £850,000 gasworks at Maelor, Wrexham, was opened on October 14. The new gasworks is an important part of the co-ordinated scheme that has been prepared for the integration of gas supplies in the North Wales area.

The installation consists of 25 chambers each of 3.65 tons capacity, arranged in one bench of five equal settings, and has a nominal maximum output of 2,250,000 cu.ft. per day . It is housed in a modern steel-frame brick-embellished building of pleasing architectural appearance and is designed for extension to double the present size in one or more stages.



General View of Condensing Plant.

Retort House and Coke Bunkers (W. J. Jenkins & Co., Ltd.)

Intermittent chambers are not limited to selected high grade coals but will deal adequately with a wide range, and particularly those of lower coking value, at the same time producing good yields of gas with a high degree of flexibility of output, and in particular a strong coke of low breeze content suitable for both domestic and industrial use.

The bench is made up of five equal settings each of five chambers. Each setting is heated by a built-in step-grate producer and has its own secondary air recuperator. A belt conveyor from the chamber house conveys the coke to a reinforced concrete building composed of screen house and bunkers of 350 tons capacity.

The main gasholder has three spirally-guided lifts in a steel tank and when fully inflated has a capacity of 500,000 cu.ft. It is equipped with 30 in. diameter valves and connections and is a riveted construction. A two-lift spirally-guided holder in steel tank, of all-welded construction with a capacity of 250,000 cu.ft., is provided for storage of carburetted water gas prior to its being mixed with the coal gas stream.

It is estimated that the Maelor works will carbonise some 36,000 tons of coal per annum, producing 2,900,000 therms of gas, 18,000 tons of coke, and 435,000 gal. of tar.

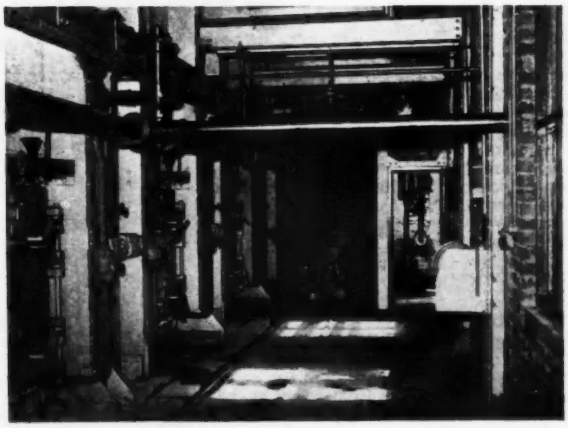
BERWICK

THE new intermittent vertical plant built by Gas Chambers & Coke Ovens, Ltd., at the Berwick-upon-Tweed unit of the Northern Gas Board, was officially inagurated by the Mayor of Berwick, Alderman G. M. Lamb, J.P., on June 16.

The new plant consists of nine intermittent vertical chamber ovens enclosed in a steel-framed building encased with a panelled blue-brick base with univertical asbestos sheeting above. The nine chambers are arranged in three beds which form the retort bench, and each chamber is 15 ft. 2¼ in. high and of approximately rectangular section, 8 ft. 2¼ in. by 8⅛ in. at the top, and 8 ft. 2¼ in. by 1 ft. 0¼ in. at the base.

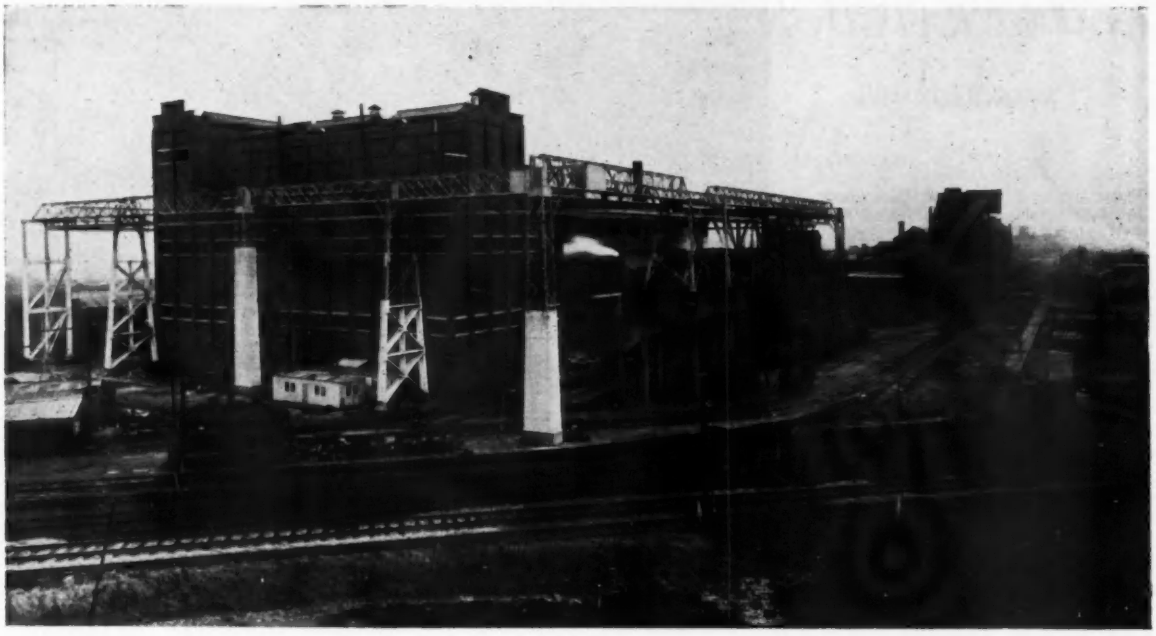
The chambers are heated to approximately 1,300°C. by the combustion of producer gas made in three producers built integrally with the chambers, the air for combustion being preheated in a recuperator by the products of combustion on their way to the main chimney. The retort bench is built of silica and firebricks and is supported on a suitably braced steel structure.

Each chamber will hold 2.3 tons of coal, and, depending on the temperature in the chamber, will carbonise this coal in 12 to 14 hours, producing coal gas at a calorific value of 540 B.Th.U. This is reduced by steaming to 475 B.Th.U. In addition, the rich coal gas can be diluted with some of the producer gas used to heat the chambers. The volume of gas made at 475 B.Th.U. can, of course, be adjusted to the needs of consumers by suitable combinations of the carbonising time, steaming time, and volume of producer gas added.



Producers and liquor pump house.

At present, the cooled coke is transported by lorry to a portable cutting and screening plant and is available for sale in the following sizes: (a) 2 in. and over, (b) ¼ in. to 2 in., (c) under ¼ in.



General view of Foleshill Works, with No. 3 retort house (sections G, H, and J) in foreground

FOLESHILL

ON November 25, the further extensions of the Foleshill Gasworks of the West Midlands Gas Board were officially inaugurated by the Lord Mayor of Coventry, Alderman H. B. W. Cresswell, who, in the presence of a distinguished gathering, unveiled a plaque to commemorate the event.

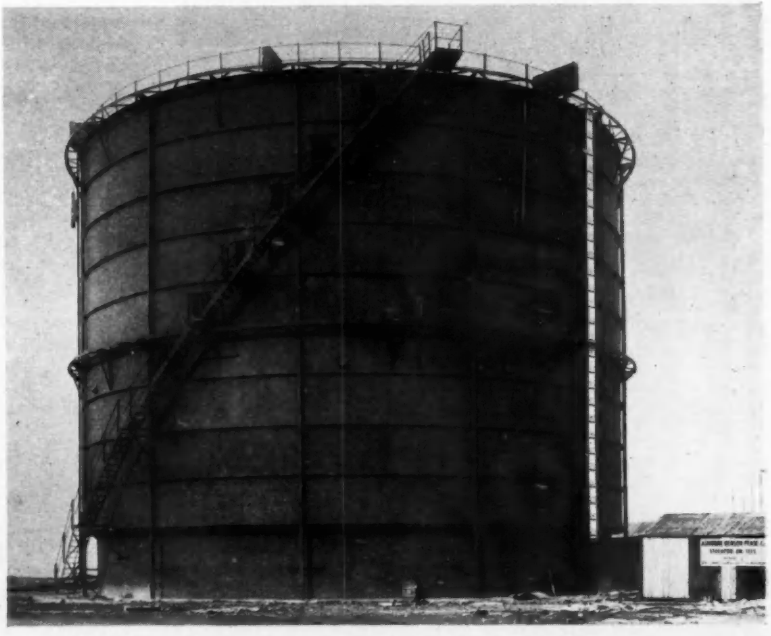
The waste-heat recovery plant consists of two Spencer-Bonecourt horizontal induced draught boilers each capable of dealing with the gases from two of the three benches. Other new plant put into commission at the Foleshill works includes an effluent liquor settling tank receiving effluent from the liquor concentrating plant in the chemical works and a balancing tank for storing and cooling it before discharge to the sewer. There is a new gasholder, spiral-guided, with a capacity of 6 mill. cu.ft. It is designed with four lifts in a steel tank. The outer lift is 232 ft. in diameter by 40 ft. deep, and the tank is 233 ft. in diameter by 40 ft. 9 in. deep. The extensions included a complete carbonising unit built in one retort house and in three independent benches so that each can be let down for repairs or reconstruction in turn. This arrangement is in accordance with modern practice, obviating the disadvantages of a large number of retorts in one bench, part of which cannot be let down without distortion of brickwork. Each bench contains twenty-four 50 in. by 10 in. by 25 ft. Glover-West continuous vertical retorts in settings of eight.

POINT OF AYR

THIS year we had the opportunity of inspecting the largest Wiggins gasholder which has so far been erected in this country. The holder had just been completed for the National Coal Board at the Point of Ayr Colliery, near Prestatyn, North Wales, and was to be used for the storage of methane gas. Although this type of gasholder is comparatively new to this country, there are several smaller Wiggins gasholders in use in Britain. The dischargeable capacity of the holder is 250,000 cu.ft. The general dimensions are: Main shell, 79 ft. 9 in. inside diameter; lower shell, 76 ft. 5 in: inside diameter; height to top curb, 63 ft.; height of lower shell to offset, 9 ft. 3 in.; height of piston fender, 7 ft. 8 in.; height of telescoping fender, 16 ft. 10 in.; height of gastight portion of shell, 27 ft. 11 in.

Its total weight is only 204 tons, but because the ground was unstable it was necessary in this case to build on a piled foundation. The piles were driven round the circumference of the shell, and at the piston support points only, which is less expensive than the piling which would have been necessary to carry a water sealed holder.

The sealing medium is a neoprene coated asbestos fabric with an area of 7,000 sq. ft. Two seals are fitted, one from the shell to the telescoping fender and the other from the fender to the floating piston.



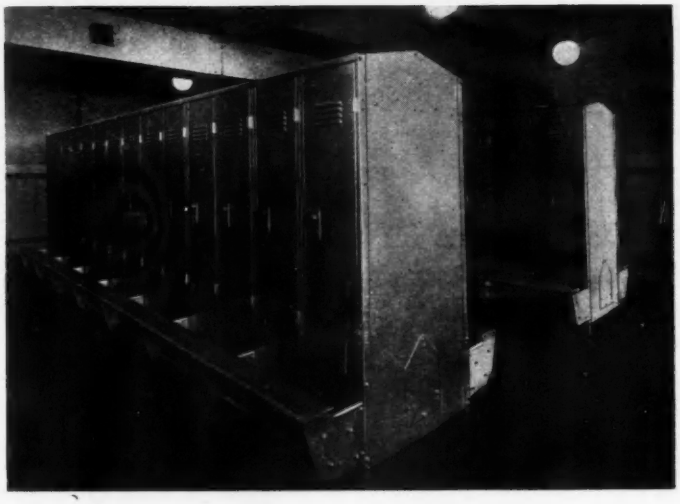
The Wiggins gasholder at Point of Ayr, showing stairway, doorways, capacity indicator, and levelling device.

CLOTHING LOCKER

Swan Village Gas Works

INSTALLATION

The 'C' type lockers shown here have been specified as the standard clean clothes equipment in the Amenities Blocks in the Swan Village Gas Works and many other Gas Works.



The 'C' type locker is 6ft. high, 15" wide and 15" deep, and can be provided with internal heating by means of plenum, hot water or steam coil. Any single or double sided grouping can be arranged.

Descriptive literature of the 'A,' 'B' and 'C' type lockers is available. Expert Speedwell installation engineers are waiting to advise you. A call by post, telephone or in person will put you in touch with them.

• • •

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a good
looker...

The No. 20 CENTURY GAS COOKER

The Century combines efficiency with pleasing appearance, is particularly easy to clean, having vitreous enamelled surfaces throughout—exterior finished in cream . . . The roomy oven gives a high quality cooking performance with a minimum gas consumption, and the whole of the oven space is available for cooking—the base being particularly suitable for slow cooking . . . Special oven features include Mainstat heat control, flash-tube lighting to burner, easy-clean rounded corners and drop-type door . . . Used oven heat vented in front of backplate and warms double-shelf plate-rack . . . The hotplate has four burners—all can be used for fast boiling *or* simmering —and a large griller. Hotplate fittings can be easily removed for cleaning and the hotplate-well is free from projections and dirt traps.

note the name — made by

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COOKER IN AN
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GAS PUBLICITY *REVIEWED*

FEW will dispute the fact that 1953 has been the most significant year for gas publicity since the war—and certainly since nationalisation. The main reason is the growing insistence on selling which has resulted from the alarming decline in appliance sales after the post-war sales and replacement bubble burst. The realisation by area gas boards that they must sell to live, brought a changed attitude towards many facets of the industry's commercial set-up. Publicity, which had been maintaining an effective but somewhat shackled existence as a supporter of 'prestige,' was required to go over to the offensive when restrictions on promotional publicity for the gas and electricity industries were lifted in July.

However, the quite sudden lifting of the ban brought forth no display of violent reaction. For one thing, this concession, which was the result of representation to the Minister by several bodies, was probably regarded by him as being in the nature of an experiment. Any undue eagerness on the part of one industry to get at the throat of the other would not have been regarded as in the interests of either the country or the consumer. Accordingly both gas and electricity approached the situation with caution and commenced to operate a scheme designed to build up gradually a publicity campaign with a strong commercial flavour. The latter half of 1953 has seen the limbering up of this process; its full effect will not be felt until 1954.

Mrs. Lloyd George, wife of the Minister of Food, visited the Gas Council stand at the National Poultry Show, Olympia. She is seen here with Mrs. Joan Robins, the television homecraft expert, who gave demonstrations on the stand, examining the Cannon A 125 cooker.

This view of the Gas Council stand at the Smithfield Show, shows in the foreground the Stott 'HGI' thermostatically controlled ham cooker. In the background is the Dowson and Mason Model 1000 gas - fired smoke-house. To the left is the steam raising boiler of Controlled Flame Boilers Ltd., and on the extreme right the ham cooker of W. J. Hubbard and Sons Ltd.

Both the Gas Council and the area gas boards have stepped up their advertising, the latter indulging in some very ambitious and successful schemes, such as the economy grate campaign operated by the North Thames and South Eastern Boards, which in the North Thames area alone resulted in more than 15,000 actual installations in the three-month period. The reduction of purchase tax on water heaters also gave boards a chance to push this valuable load, with admirable results. However, it is with the Gas Council that we propose to deal, and with the various ways in which the industry is represented on a national basis.

The use of films by the gas industry as a publicity medium is a practice which has steadily grown. Today the Gas Council is one of the principal makers of publicity and instructional films, and in quality and imagination is certainly among the top three or four in this field. Despite this, it is probably true to say that the full possibilities of screened gas publicity have by no means been fully explored. During the past two or three years, commercial versions of some of the films have been made for showing in public cinemas, thus extending the message for gas to a further audience coverage of some 5-6 mill. for each of these films.

The audience for gas films is steadily being widened. Last year, for example, audiences who saw films issued by the gas industry totalled 4½ mill.—four times the number a few years ago—but the Gas Council contends there is still a vast audience not yet reached. Last year, for instance, 10,000 copies were issued. Furthermore, many films were sent overseas which necessitated making foreign versions. The bulk of the audience—amounting to 3½ mill.—was reached by films distributed by the Council's Film Library. The rest saw shows arranged by local gas boards, who last year gave 12,000 screenings using 77 of their own projectors. In addition, some boards used existing commercial projector facilities. Detailed records compiled by the Gas Council show that, on average, each film booked from the library is screened 2¼ times to 80 people at each performance. Some 70% of these bookings are to schools, colleges, and technical institutes, 20% to societies and social bodies, and the remainder to

Part of the magnificent gas pavilion which was one of the outstanding features at the Ideal Home Exhibition this year.

(OVER 400,000 OF THEM THIS YEAR)

and the
HONEY*moon*
starts here

400,000 marriages in 1954, and 400,000 brides setting up home. There will be a year-round Honeymoon in the Gas Showrooms with the Parkinson Paragon Gas Cookers.

The Paragon will match and scheme whilst the clean design will enchance any kitchen.

The easily cleaned hotplate will win their hearts.

A 'billet-doux' for Little Bill. He husbands the housekeeping money.

PARKINSON

PARAGON

In Honey, Grey and All White

THE PARKINSON STOVE COMPANY LTD., STECHFORD, BIRMINGHAM, 9. *A member of the Parkinson & Cowan Group*

local government authorities, national and industrial organisations. In general, area boards use comedy films more frequently than other users who borrow films direct from the Gas Council's library.

The demand for the Council's illustrated film catalogue indicates the increased interest. In 1952, for instance, 700 copies were distributed; today the figure is 9,500. More than 20 films are listed in the catalogue and cover a wide variety of treatment, including coloured cartoon, straightforward instructional films, broad comedy, and dramatisation of national social problems. But the increased interest clearly indicates the need for increased production. At present the Gas Council has 23 reels of new films in course of preparation or production, including instructional films on the manufacture and utilisation of gas (made primarily for use in schools) and a three-reel general interest film in Technicolor. Several film strips are also in production.

During the year a set of six short 'magazine' films under the common title 'Behind the Scenes' was issued, and demand for these is mounting.

In the sphere of exhibitions the Gas Council has been strongly represented.

Typical of the specialised trade exhibitions run by the area boards was this Catering Exhibition run by the Leeds group of the North Eastern Gas Board.

The South Western Gas Board has staged some memorable exhibitions at Bristol. This is the show of industrial equipment which was held in February.

The ever-popular Ideal Home Exhibition included 'All the Year Round with Mr. Therm,' in which the Gas Council ingeniously displayed the benefits of gas in the four seasons. The stand was a successful one, and was amply supported by a gas section comprising ten manufacturers. In addition, the show houses contained a high proportion of gas equipment.

The British Industries Fair was again the stage for a comprehensive gas exhibit, in which the Gas Council concentrated on new industrial processes for which gas is pre-eminent. Again a gas section supported the central stand. As before, the opening of the meeting was heralded by the staging of the Industrial Gas Conference in Birmingham, an event which is highly regarded in the industry as being the only real get-together of industrial gas representatives.

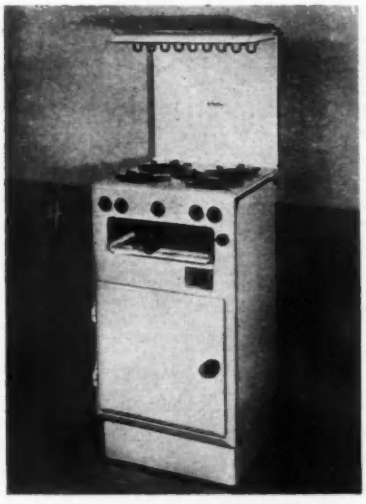
Other exhibitions at which the Gas Council was represented included the Building, Schoolboys', Royal Show and Royal Highland Show, Dairy Show, Smithfield Show, Poultry Show, and the Engineering and Marine Exhibition. This last was perhaps the show of the year, notwithstanding the crippling blow struck by the electricians' strike. It is interesting to note that in the years before nationalisation, the then British Commercial Gas Association were concerned with five national exhibitions, and that now the number has increased to 14—with virtually the same staff and accommodation.

The effectiveness of gas publications, like gas films, is dependent on the degree to which they are used. Neither films nor publications are, in general, receiving the attention which is their due, and there can be little doubt that in the past distribution in certain areas has not justified the hard work and hard cash which have gone into production.

During the year the standard of Gas Council publications has been maintained and many items have been produced. Among the most effective were *Cooking by Gas*, which was actually published by Good Housekeeping and had the advantage of the Institute's name and distribution facilities, and *Make Your House Cosier in Winter*, which was published by the Domestic Insulation Committee of the three fuel industries.

We must not forget the individual undertaking's contribution to publicity. Many undertakings run displays of a specialised and local nature in their windows. The example above is a display at Bournemouth emphasising the part played by gas in the pottery industry.

A Year of Outstanding



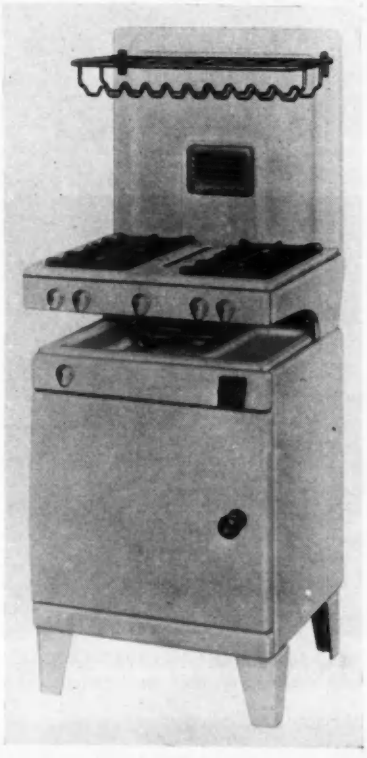
Increased efficiency with the latest G.4. De La Rue.

To commence our review of new appliances described and illustrated in the 'JOURNAL' during 1953, we feature the new version of the G.4 domestic cooker by Thomas De La Rue & Co., Ltd. Known as the G.4 Mk. III, it incorporates a number of modifications and refinements designed to give increased efficiency and improved appearance. The new cooker is fitted with a one-piece cast iron top bar which improves appearance, minimises rattling, and simplifies cleaning. The four circular interchangeable pan rests have been re-designed to give improved ventilation with re-entrant based vessels, and a small additional pan rest is fitted in the centre of the hotplate. The purpose of this additional pan rest is to keep a pan warm when other burners or the grill are in use.

The Parkinson 'Renown Five' cooker which incorporates many advanced features of engineering and design is illustrated below. Almost identical to the 'Coronation Renown' which was shown privately at the Ideal Home Exhibition in 1952, this is the first British cooker to incorporate twin eye-level grill. Other advantages include automatic flash ignition to all burners, including the grill—a feature not found on any other gas cooker. The exceptionally roomy oven is big enough to take the largest turkey it is possible to buy. The warming drawer, set below the oven, moves smoothly and silently on nylon rollers and is constructed with grooves for plates.

'Renown Five'—a model of advanced design

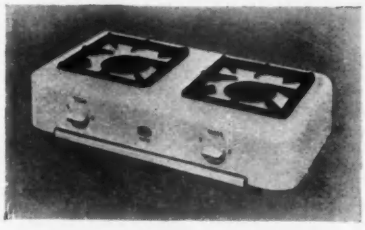
The New World 75 cooker introduced by Radiation Ltd. is of attractive modern appearance. The open and the hotplate/grill units are designed independently and



The New World '75' is appropriately named.

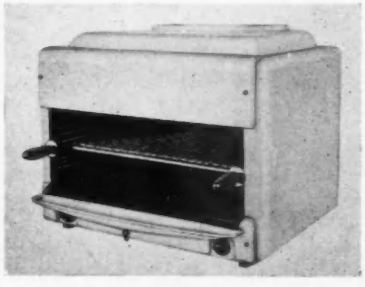
are separated by a clear space. The oven flue gases are vented forward beneath the plate-grid to avoid staining the wall and to make some use of the heat in the flue gases for warming plates. The cooker may be fitted flush to the wall if desired. All taps are of the safety type, mounted on the front of the cooker. A built-in constant pressure governor ensures steady performance. The cooker is completed by a vitreous enamelled splashback and upward-folding plate-grid; the latter easily lifted for cleaning.

On the right is illustrated the 10B griller recently produced by the Vulcan Stove Co., Ltd. Of particular interest to those dwelling in one-room flatlets, caravans or yachts, this is a neat and readily portable table unit attractively finished in cream vitreous enamel with black vitreous enamel burners and hotplate. It has a boiling burner, a reversible grill burner and a tin grill pan. The dimensions (with open cover top) are: Height 19¼ in., width 19½ in., depth 14 in. The weight is 38 lb.



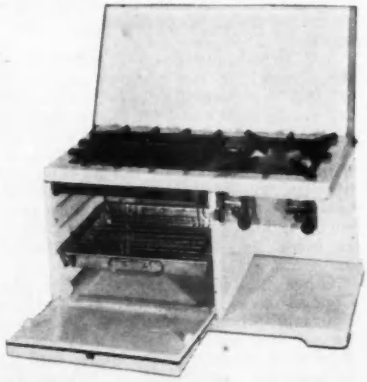
A Main No. 72 rangeplate means cooking in a nutshell.

The Main No. 72 rangeplate has been specially designed and developed for use in small kitchens or anywhere where compact or supplementary cooking facilities are required. It will stand on any convenient shelf or table. The pressed steel hotplate is finished in cream acid-resisting vitreous enamel. Economical in use, the No. 72 rangeplate has a maximum gas consumption for each burner of 10,000 B.Th.U. per hour when boiling and 900 B.Th.U. when simmering.



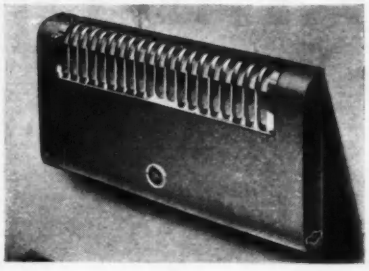
Fast and even cooking with a Main GG.222 griller/toaster.

Another new appliance introduced by R. & A. Main, Ltd., that will prove of great value to catering establishments, hotels, institutions, hospitals, etc., is the Main GG 222 gas griller and toaster. The new patented features incorporated in its design make this griller fast and economical. The heat-resisting steel frets fitted are used in conjunction with insulating bricks to give very rapid heating-up and high efficiency. The result is fast and even cooking over a large area. The GG 222 griller is available in two finishes, dapple and cream.



The 10B Vulcan griller is an attractive table model.

Appliance Development



Background heating at low cost with the 'Royal'

Designed for background heating in large rooms and for providing heating in bedrooms, bathrooms, halls, garages, caravans, small boats, etc., the 'Royal,' illustrated above, was designed by Lloyd Metcalfe Designs, Ltd., of Leamington Spa. It is a flueless heater consuming 7 cu.ft. per hour at 2½ in. W.G. on town gas and 0.94 cu.ft. per hour at 12 in. W.G. on liquid petroleum gases. The dimensions are 24 in. × 12 in. × 3 in. Two Bray jets are used, one being a heating jet and the other a small luminous jet to illuminate the red glass panel showing the word 'ON.' A major feature of the 'Royal' is that it gives the advantages of background heating at low initial installation and running costs.

A completely new design of convector gas fire giving a high output of both radiant heat and warmed air was introduced in 1953 by Bratt Colbran, Ltd. It took the form of the 'Port Royal' fire and was designed to enable a single gas appliance to give a full heat service for the living room or lounge. The overall efficiency shows an increase of 33% compared with the normal modern non-convector type of gas fire. A curved emitting surface radiates heat over a wide angle into the room, and the fire can therefore be seen and felt by those seated at the sides of the fireplace. A proportional turn-down tap with automatic ignition is provided, together with a governor which operates at all gas rates. The heat input is 16,000 B.Th.U. (32 cu.ft. per hour of C.V.500 gas).

The 'Port Royal' gives increased efficiency.

A new gas appliance introduced by Main Water Heaters, Ltd., is the back boiler conversion unit, or 'B.B.U.' The appliance is a portable unit designed to be placed in the grate against a back

View of the 'B.B.U.' standing in an open grate.

boiler to provide hot water in bulk at times when the grate is not in normal use —*e.g.*, in summer. It is not intended to provide a continuous supply of hot water and should only be used periodically when occasional bulk supplies of hot water are required for baths, laundering, etc. Finished in aluminium paint, the 'B.B.U.' has an overall height of 10¾ in. (maximum), 8¾ in. (minimum), width 9⅜ in. and depth over handle of 6½ in.

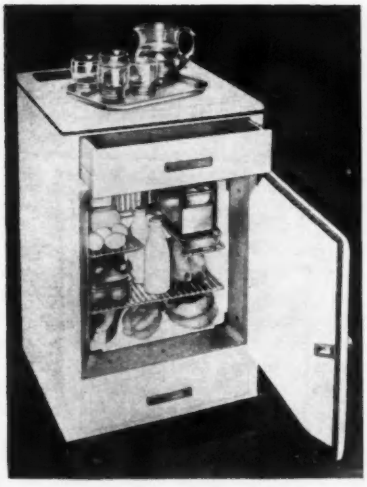
An immaculate 'Easiclene' table top refrigerator.

The latest addition to the wide range of 'Easiclene' domestic equipment was the 2 cu.ft. table-top silent absorption type refrigerator which is now marketed in addition to the already widely known 4½ cu.ft. model. The new refrigerator, illustrated here, has full thermostat control and a governor is fitted to ensure constant rate of gas under varying supply pressures. The finish is of finest quality steel throughout. The exterior is enamelled and the interior porcelain-enamelled.

Plenty of space with an Astral free-standing model.

A free standing refrigerator was introduced by Astral Equipment, Ltd., of Glasgow. The new model is in addition to the company's table model and is not in substitution of it. Following the latest trend in refrigerator design, it is a good looker, has an internal capacity of 1.5 cu.ft., and makes available the bottom part as ordinary storage space. The whole exterior is constructed of zinc protected mild steel sheet, carefully finished in the best quality white stove enamel. Fitted with an absorption unit, thermostatically controlled, the gas consumption is $\frac{1}{10}$ therm per day.

This year is the first since the war in which Electrolux refrigerators have been in free supply on the home market. Coincident with this circumstance, the company has introduced certain alterations in policy. The Model LM.150 is being replaced by the LH.150—a handsome cabinet with a table-top and a drawer for kitchen utensils. This is a completely new introduction in refrigerator design, making the LH.150 a useful cabinet for the small kitchen. Hire purchase and credit sales facilities are available for all models.



The L.H.150 Electrolux refrigerator incorporates cabinet features.

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RESEARCH

Today we conclude from p. 796, Dec. 23, the series of articles by 'Gas Journal' Observers who attended the various sessions of the RESEARCH MEETING of the INSTITUTION OF GAS ENGINEERS.

Corrosion and Maintenance

A VERY considerable proportion of the time and money spent on the gasworks goes to the renewal of the coatings with which its structures in iron and steel are covered to protect them against the oxidising effect of the atmosphere and the corrosive effect of some of the gases with which they come into contact. Dr. A. Marsden presented last year to the South Western Section of the Institution a comprehensive paper (GAS JOURNAL, February 13, 1952, p. 413) on the causes and prevention of corrosion. He said: 'The amount of money spent annually on protective schemes for ferrous structures is prodigious and yet the damage caused by rust still gives rise to grave concern.' It is that aspect of Mr. Ravald's report (GC9) which will be of the greatest interest to maintenance and constructional engineers in the gas industry.

Two Schools of Thought

As to whether the protection of mild steel against oxidation should begin at the rolling mill or directly after fabrication there appear to be two schools of thought. The former is concerned about the removal of the mill scale which can prove so troublesome at any of the later stages in the life of the rolled steel. And this problem seems to be most elegantly solved by one or other of the acid pickling processes which are now available. Of these the Footner phosphating process is the most widely known both at home and abroad. 'The object is to form a layer of microscopic crystals of phosphate of iron between the metal and the layer of paint. It has been observed that paints applied after this treatment have a quite exceptionally long life.'

But this involves the application of the primer at the rolling mill, after which it is liable to damage during transit and fabrication. The ideas of the other school were most forcibly expressed by Mr. E. M. Pool, of the well-known paint manufacturing company. In view of all the circumstances, including the possibility of work lying out for long periods before erection, he thought there was much to be said for allowing 'steel work to weather, with no boiled oil, no red lead, in fact no paint at all, until the whole three or four coat system can be applied in suitable weather conditions, under full control and with the correct time between coats to ensure maximum adhesion one to another.'

Thorough Cleaning Essential

Present good practice lies somewhere between these extremes and there does not seem to be much seriously wrong with it. The emphasis everywhere is on a thorough, conscientious cleaning of the surface before paint is applied to it. A point not mentioned in the discussion is that in fabrication, component parts riveted together in the shops must be carefully painted on their interior surfaces. And here arises a point in design. Details such as gusset plates, stiffeners, and corners where water and dirt might collect should always be so designed as to avoid this possibility. After fabrication the surfaces of the parts or assemblies are cleaned and a priming coat of paint applied.

'Every year in this country,' said Dr. Marsden, 'some 40 mill. gal. of paint is used on iron and steel and much of it is wasted due to inadequate preparation of surfaces or its application under unsuitable conditions." The main trouble is the removal of the mill-scale which generally covers only part of the surface of rolled material as it reaches the structural shop. The wire brush is effective enough in removing the rust from the rest of the surface, but chipping must often be resorted to to secure a thoroughly clean surface. Mr. Ravald disclaimed personal experience of the flame treatment, but he understood that it was unable to remove certain types of mill scale. It would appear, however, from the discussion that in spite of its cost its use might well be further investigated.

The Ideal Primer

Work is often delivered to the site with one coat of red oxide paint, but red lead in linseed oil is 'considered to be the most universally satisfactory' primer. Mr. Ravald also recommends primers with other bases of which calcium plumbate is particularly effective. Here it may be recalled that the Research Department of Gaz de France is greatly interested in paint with a coal-tar pitch base. These points are generally self-sufficient. They are not normally used over a primer; they need no protective varnish; and they lend themselves to metallisation. At the same time these pitch paints, black or coloured, can be used over old paints or a red lead primer. M. Marty, discussing these paints, classified paints in general under two headings; films which subsequently oxidise, resinify and become impermeable to air, the ultimate film being chemically different from that originally applied, and films carried in a solvent which evaporates, the film itself undergoing no chemical change. Pitch paints come under the latter heading.

A New Technique

The portions of the Report and the discussion dealing with metallisation will be read attentively. It is a new technique, within, say, the last 20 to 30 years, with great possibilities. Zinc coating appears to be particularly effective. 'On purely technical grounds, if a single treatment has to be chosen for all steelwork, zinc coating is probably the one most suitable.' The steel fenders at Nine Elms 'spray coated with zinc and covered with bituminous paint' will be noted. One wonders whether some form of metallisation would not solve the problem of the steel chimney from retort settings which is often such an eyesore, with its paint burnt off and rust forming upon it.

The problem of painting the water-sealed holder was discussed at length, but it cannot be said that a wholly satisfactory solution has been found. This is a pity, since, as Mr. Ravald says, 'these structures, to the man-in-the-street the hallmark of gasworks and famous in certain Test Match commentaries, are becoming objects of more serious interest to an increasingly critical public.'

Effects of Ammonia

Corrosion due to foul gas and to sulphur and cyanogen compounds in the purification processes, wet and dry, is a subject about which there is a lack of information which prompted the initiation of laboratory investigations at Fulham. 'The coal gas industry is fortunate in having ammonia already present at most points in the purification processes' and ammonia functions as a corrosion inhibitor, an inhibitor however which ceases to function when plants are opened up to the air. 'No serious general corrosion of the interior of iron or steel coal gas plant' occurs in wet purification processes during continuous operation. The story is different in liquor concentration plants and here non-ferrous alloys are called in to withstand corrosion. It is not clear what happens in the dry purifier. Corrosion by wet coke gives rise to trouble particularly where it is conveyed in steel buckets and where steel structures are designed to stand in the coke

storage heap. To obviate the first, buckets have been made, without any great success, in copper-bearing steel and they have been coated with enamel. Aluminium alloys and stainless steel have been suggested with the claim that the vastly greater cost is repaid in much longer life. But the best solution is to convey coke (and if possible, elevate it, too) on the rubber belt. Steel used in structures surrounded by coke heap is best embedded in concrete—*i.e.*, in the form of ferro-concrete.

This is an eminently practical report, a fine example of the assistance which the laboratory can give to the works, crammed full of useful information adequately conveyed with an admirable economy of words.

Wind Pressure on Gasholders

RESEARCH Communication GC11 sends us back to GRB28 of 1946 when wind tunnel experiments on models of a gasholder were reported to the Institution because, as Mr. F. M. Birks put it, of 'doubt in the mind of some people about the loading on the carriages of a spiral-guided gasholder.' Wind-tunnel experimental results were only available for other types of holders. Mr. A. G. Grant set out in general terms the several effects of wind on this type of holder, effects which could not be assessed theoretically; and he expressed general doubts about the application of model results to the full-scale holder. These doubts, Mr. Milbourne replied, would always exist until wind pressure records had been taken on an actual holder. And this is precisely what we have in this year's admirable report presented in GC11 by Mr. W. A. Simmonds, of the Birmingham Research Station of the Gas Council. It rounds off this work to the point where Mr. Birks is able to say that no further full-time experiment of this character need be done, as the results which have been obtained can be readily applied to other designs of holders; and to continue with, 'if further data are required, wind tunnel experiments may be relied upon to give all that is necessary.' A very satisfactory result.

Very early in the report we were pleasantly impressed by the statement that the successful development of the spiral-guided gasholder is one of the achievements of the British gas industry. It is established as the most suitable type of low pressure storage. Its use is extending to the Continent and the Commonwealth. And soon the 'Hallmark of the Gasworks' will be entirely bereft of its panoply of columns, criss-crossed with bracing, and crowned with 'ornamental' capitals.

Mr. Birks' thinking aloud on the point whether a gasholder should be considered a floating structure or as a machine was most interesting. Designers will reflect on the bearing pressures allowable on rollers, and these considerations may lead to improvements which will still further extend the life and increase the reliability of these long-lived machines. Indeed, drastic modifications in standard roller specifications would seem to be called for, some of them along the lines put forward so cogently in his three points by Mr. A. F. G. Austin, Whessoe's Chief Engineer. Such figures as a wind pressure of 50 lb. per sq. in. seem strangely out of date.

There remain the effect of the topography of the site, the effect of surrounding buildings and structures, and more complicated still the distribution of the resultant stresses in the holder structure and in the tank. No doubt these will be covered in the second stage adumbrated by Mr. Simmonds in his verbal reply to the discussion.

The actual holder chosen for these important investigations is that at Brentford of which photographs were published with GRB56 of 1950. Rain and hail had not nearly as much effect in increasing the load due to the accompanying wind as might have been expected, but they must have increased considerably the discomfort of making observations in the open and just at the time when such observations were most vital. We should realise that no small amount of fortitude as well as patience must have gone into the collection of these interesting and immensely valuable data. Research men, as Mr. Birks observed, are not often called upon to climb about on an exposed structure in a heavy gale and in rain and hail.

In general these results do not indicate the necessity for any significant variation in the design of gasworks buildings and other exposed structures from the stipulations laid down in BSS 449:1948 to which constructional engineers work. 'Gasholders,' says Mr. Simmonds, 'are rarely erected in exposed positions, so that the maximum wind speed to be allowed for is not likely to be greater than 60 m.p.h. in this country.' The maximum contemplated in the BSS is 80 m.p.h. It has been suggested that such speeds occur only in gusts of short duration and that therefore allowable stresses in the structure could safely be taken considerably higher than the customary 'safe load.' Would this also apply to gasholders?

COMPANY NEWS

TORONTO GAS COMPANY

The 105th annual report of the Consumers' Gas Company of Toronto reveals a revenue from gas sales during the year ended September 30, 1953, of $13,280,832 (£1=$2.73) representing an increase over the previous year's sales of $870,020. Payment of dividends amounted to $1,164,416—equivalent to a return of 5.085% on the total contributed capital. Sales of domestic appliances, says the report, increased by $43,028. After more than four year's planning and negotiation the company had secured the approval of the United States to purchase natural gas from reserves in Texas and Louisiana. Opposition to the plan had developed in favour of an all-Canadian project to bring Alberta gas eastward, in spite of evidence that such a move would be uneconomical. (*Note:* Mr. C. E. Manning, the Canadian Premier, is reported to have said recently that Alberta had more than enough gas to supply the eastern market. Permission was deferred, however, until the two major competing pipeline companies joined in one overall project to the east.)

SIDNEY FLAVEL & CO. LTD.

The Chairman, Mr. Duncan Wright, stated at the annual general meeting of Sidney Flavel & Co., Ltd., on December 15 that both turnover and trading profit had increased in the year ended July 31. Net sales for that year totalled £2,127,595, an increase of nearly £200,000 on the previous year. Sales of gas appliances during the year were substantial. The resources of the Leamington factory were severely taxed to meet demands for cookers. Demand was still rising and the board had a constant problem of matching production and increasing requirements. There was a large market for solid fuel grates, which were being sold in very considerable numbers to area boards in connection with coke campaigns. There was a steady demand for clothes drying cabinets, space heaters, and solid fuel grates with boiler attachments. Sales figures showed that turnover for the first quarter of the current year again increased, and the company had widened its range of products available to the gas industry. Subject only to unforeseen circumstances, results for the current year should be at least as good as those for the year under review. The recommended final dividend of 7½% was approved. The Chairman said arrangements had recently been concluded for the purchase of Turley & Williams, Ltd., gas appliance manufacturers, of Birmingham.

Figures Just Issued by the National Savings Committee show that at the end of September group members of national savings committees in area gas boards, totalled 23,842 and their savings subscriptions amounted to £231,160.

National Coal Board Research

At the autumn meeting of the Institution of Gas Engineers Dr. W. Idris Jones gave the following outline of how the N.C.B. is lined-up for research at the present time.

THE coal industry and the gas industry are not unconnected, and it is not unlikely that what the National Coal Board is doing by way of research may have some effect on the activities of the gas industry in the coming years.

Under private ownership, relatively little research was undertaken in the coal industry, and when the National Coal Board took over the mines on January 1, 1947, only 10 scientists and 20 assistants were available for central research work, the remainder being called upon to organise and man the scientific control organisation in the divisions and areas. Since then encouraging progress has been made. Like the Gas Council, the Board has found it convenient to have two research establishments, and each of these is well equipped with laboratories, machine shops, and so forth. Each of these has a strength of about 350, including about 90 scientists and qualified engineers apiece. In addition, strong encouragement is given to the pursuit of extra-mural research projects in universities, research associations, and elsewhere.

This research work is co-ordinated by the Director-General of Research at headquarters. He is assisted in the preparation of the research plan by an inter-departmental research committee, by the directors of the research establishment, and by the divisional staffs. It is framed on the lines of a relatively small number of major objectives, each of which is subdivided into a number of lines of research, and each of these into a number of specific experimental investigations.

Work at Stoke Orchard

The research establishment, C.R.E.1, at Stoke Orchard, near Cheltenham, under the direction of Dr. J. Bronowski, deals with the preparation of coal for the market. We are trying to improve quality by thermal treatment, including the fluidised thermal treatment, of coal. At Stoke Orchard we are also working on briquetting and briquette carbonisation and on other aspects of the up-grading of coal, especially non-caking low rank coals, and also the products of the treatment of coals. We lay special emphasis on the fundamental side and on novel processes. The establishment has developed a mobile fines washery and new de-watering techniques. The present floor space of about 40,000-50,000 sq. ft. will be considerably extended in the near future.

The Board's research establishment C.R.E.2 at Isleworth, Middlesex, under the direction of Dr. Leonard Tyte, is concerned with mining engineering, and current work on underground problems includes coal winning and transport, control of the working environment, instrumentation, and safety. Here again, considerable attention is given to basic knowledge and also to general up-grading and to endeavouring to reduce the cost of mining and the percentage of impurities and fines produced during cutting and loading of coals. We have made notable progress in the measurement and control of methane and airborne dust, in the hydraulic transport of coal, and the development of a walking pit-prop, a percussive coal plough, and improved forms of rock drill. The available floor space at Isleworth is about 70,000 sq. ft.

In regard to extra-mural work, a separate directorate, under Mr. A. Whitaker, co-ordinates the research activities of the Board. Most of the work sponsored by us at the universities is of a fundamental nature, for example, on the structure of coal at Cambridge and Birkbeck; but among specific projects may be mentioned research into strata control at Newcastle, ventilation at Nottingham, and methane at Imperial College.

The Board sponsors research at several research associations, including the British Coal Utilisation Research Association, the British Coke Research Association, the Coal Tar Research Association, the British Hydromechanics Research Association, the Rubber Research Association, and other outside agencies.

The work of the Board on problems of safety, such as fire prevention, explosives and explosion prevention, dust and rescue, is co-ordinated with that of the Safety in Mines Research Establishment of the Ministry of Fuel and Power, which is directly responsible for this subject. Work on underground gasification of coal is done in collaboration with the Ministry also.

Certain investigations, too, are carried out in collaboration with the other nationalised industries, and overall co-ordination of the research programmes in the nationalised industries is achieved by way of the Scientific Advisory Council of the Ministry of Fuel and Power.

Medical and Human Problems

A fourth line of activity in research investigations is in the field of medical and human problems. In research in this field, which is under the direction of Dr. Rogan, the Board's chief medical officer, the Board co-operates with the Medical Research Council, which maintains a pneumoconiosis research unit, and with various other investigators. Problems under investigation, apart from pneumoconiosis, include rheumatism and nystagmus and physiological and psychological research. The Board has recently started a field survey of 24 selected pits throughout the country to discover more about the incidence and origin of pneumoconiosis. This survey, which is being undertaken in collaboration with the Medical Research Council, will embrace 30,000 miners and will involve the taking of daily measurements of dust and bi-annual X-ray examinations for a period of 10 years.

A small field investigation group comprising 26 scientists is engaged in applying the methods of operational research to many diverse problems that arise in the industry.

A number of local research problems are also being studied by our scientific control organisation, which amounts to over 2,000 scientists of various grades in the divisions and areas. Some of the problems, such as drainage of methane from the coal measures, are being studied in close collaboration with our production staffs. Our coal survey organisation, comprising 160 investigators, continues its invaluable work on the physical and chemical survey of our coal researches.

The budget for this research work is approximately £1,000,000 per annum, which is equivalent to 1d. per ton of coal mined.

In addition, considerable development work on machines and processes is being done by our production department, and a separate establishment for engineering development is being set up.

NATURAL GAS IN HOLLAND

WITH the new 290-mile pipeline system all but completed, natural gas is now available to most municipalities in the provinces of Groningen, Friesland, Dentre and Overijsel, also in part of the province of Gelderland, all in north-eastern Netherlands. The gas is produced from various fields near the German frontier, by N.A.M. (Nederlandse Aardolie Mij.), owned jointly by Bataafsche Petroleum Mij. (Royal Dutch-Shell Group) and Jersey Standard. In accordance with its concession terms, N.A.M. sells the gas to the Government who in turn sells most of it to local municipal gas concerns for distribution. The delivery of an average of 150 mill. cu.m. of gas (equivalent in calorific value to about 150,000 metric tons of fuel oil) has been guaranteed for 20 years. This annual supply would cover one-sixth of the country's present gas demand. The Government has fixed the wholesale price of natural gas to municipal gas concerns, at 6.5c. (1¼d.) per unit of 4,000 kilo-calories. This price is lower than the production cost of coal gas at gasworks operating under the most favourable conditions. Large-scale industrial consumers (taking at least 20,000 units a year) may also buy natural gas at the same wholesale price. This group of users, pays for its natural gas 40% to 50% less—on a calorific basis—than it would have to pay for coal gas.

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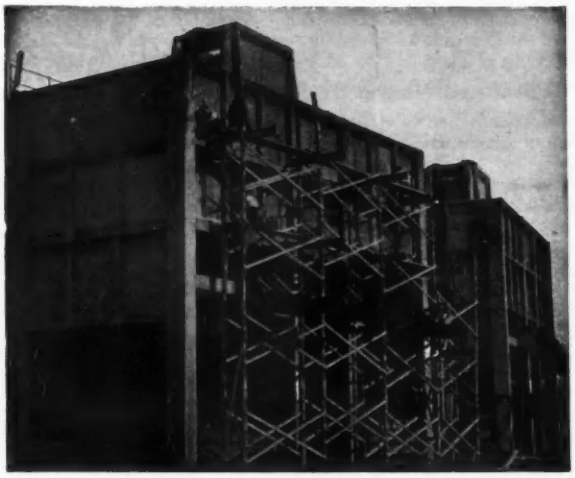

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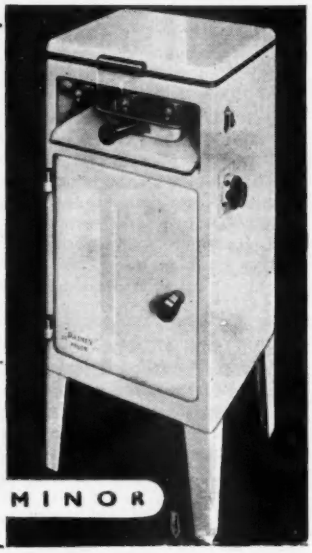

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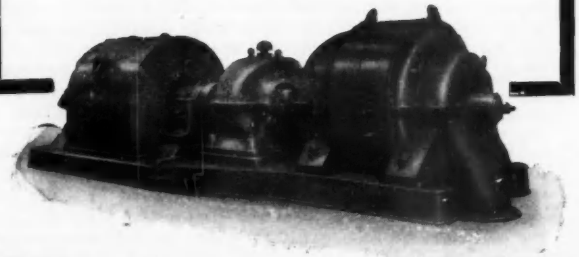

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Applications, stating age, present position, qualifications and experience, together with the names of two referees, should be addressed to Mr. J. E. Wakeford, Divisional General Manager, West Midlands Gas Board, Birmingham and District Division, Gas Offices, Edmund Street, Birmingham, 3, to reach him within fifteen days of the appearance of this advertisement.

F. H. CURETON,
Secretary to the Board.

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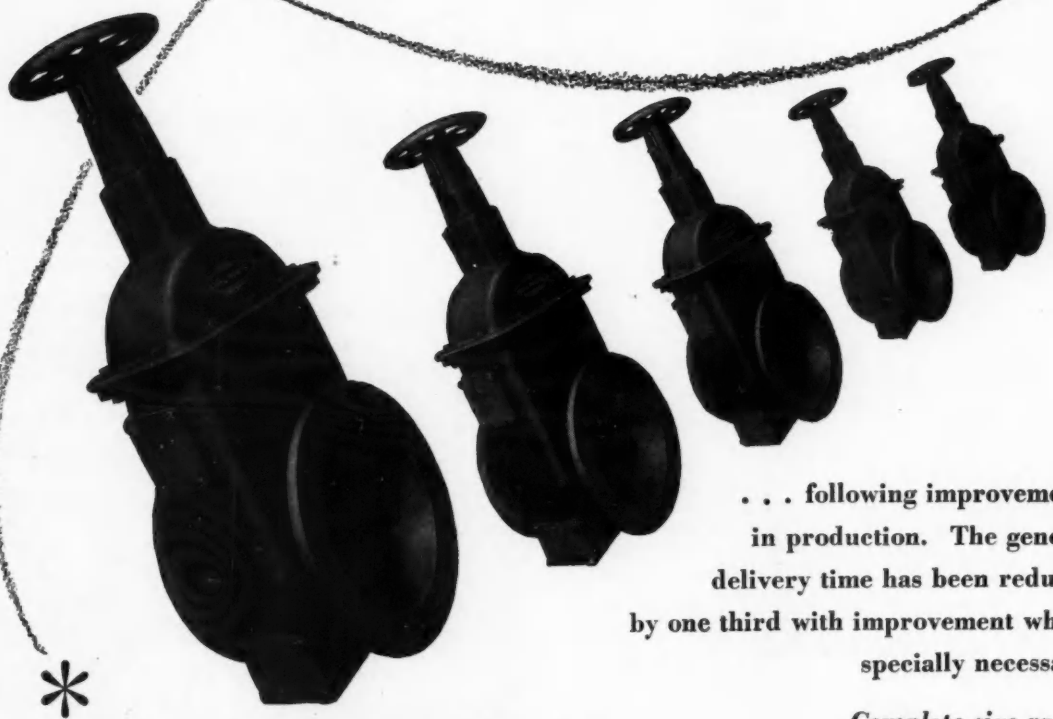

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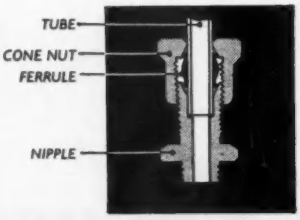

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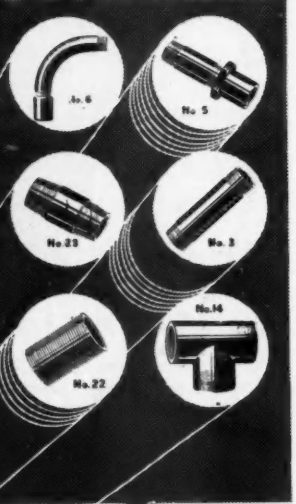

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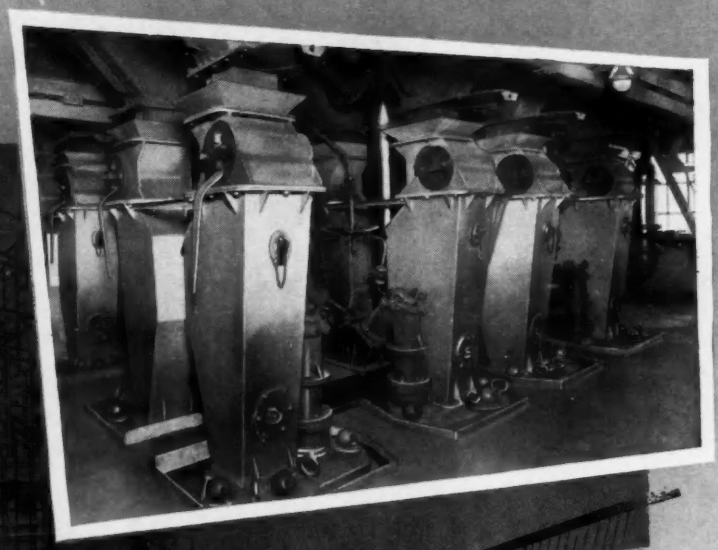

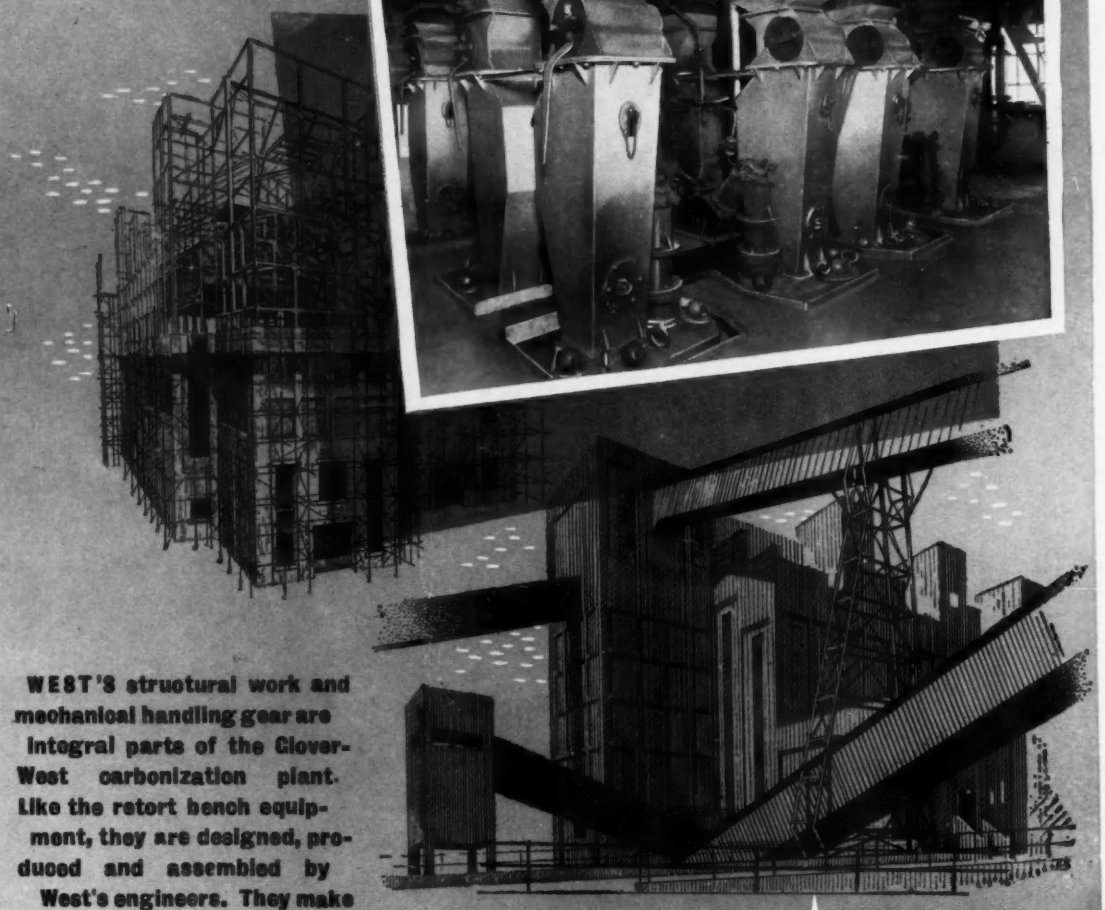

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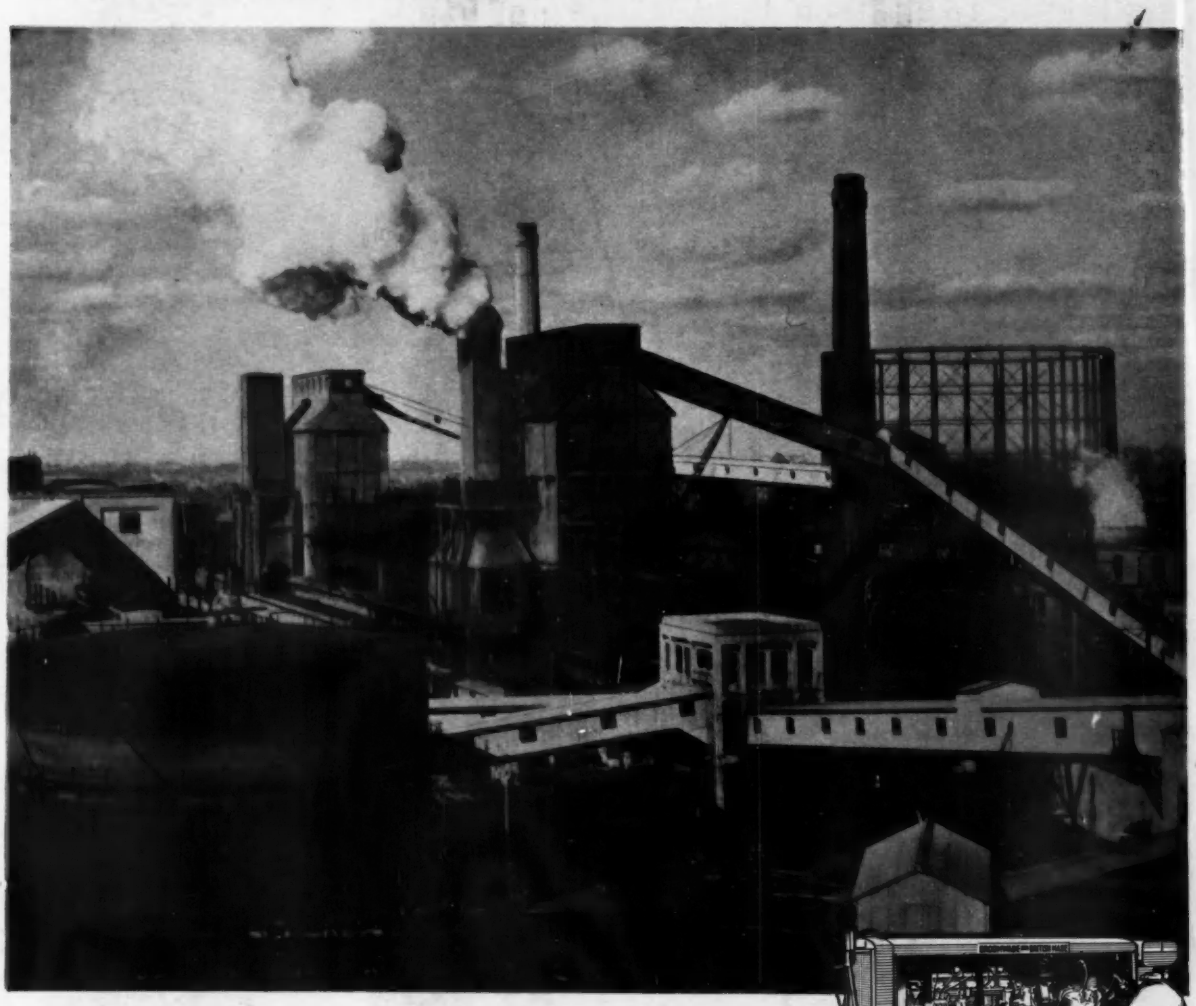

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